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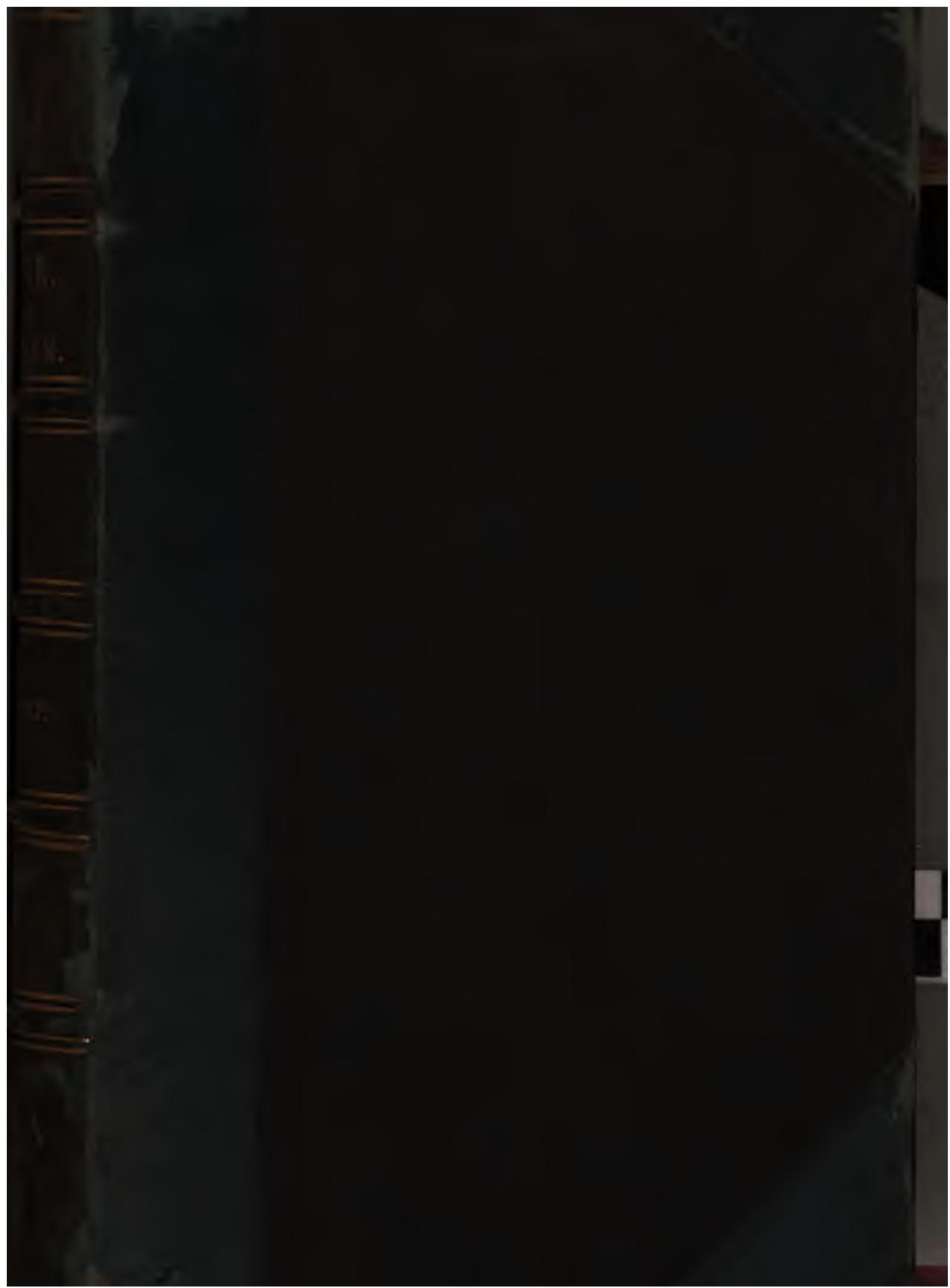
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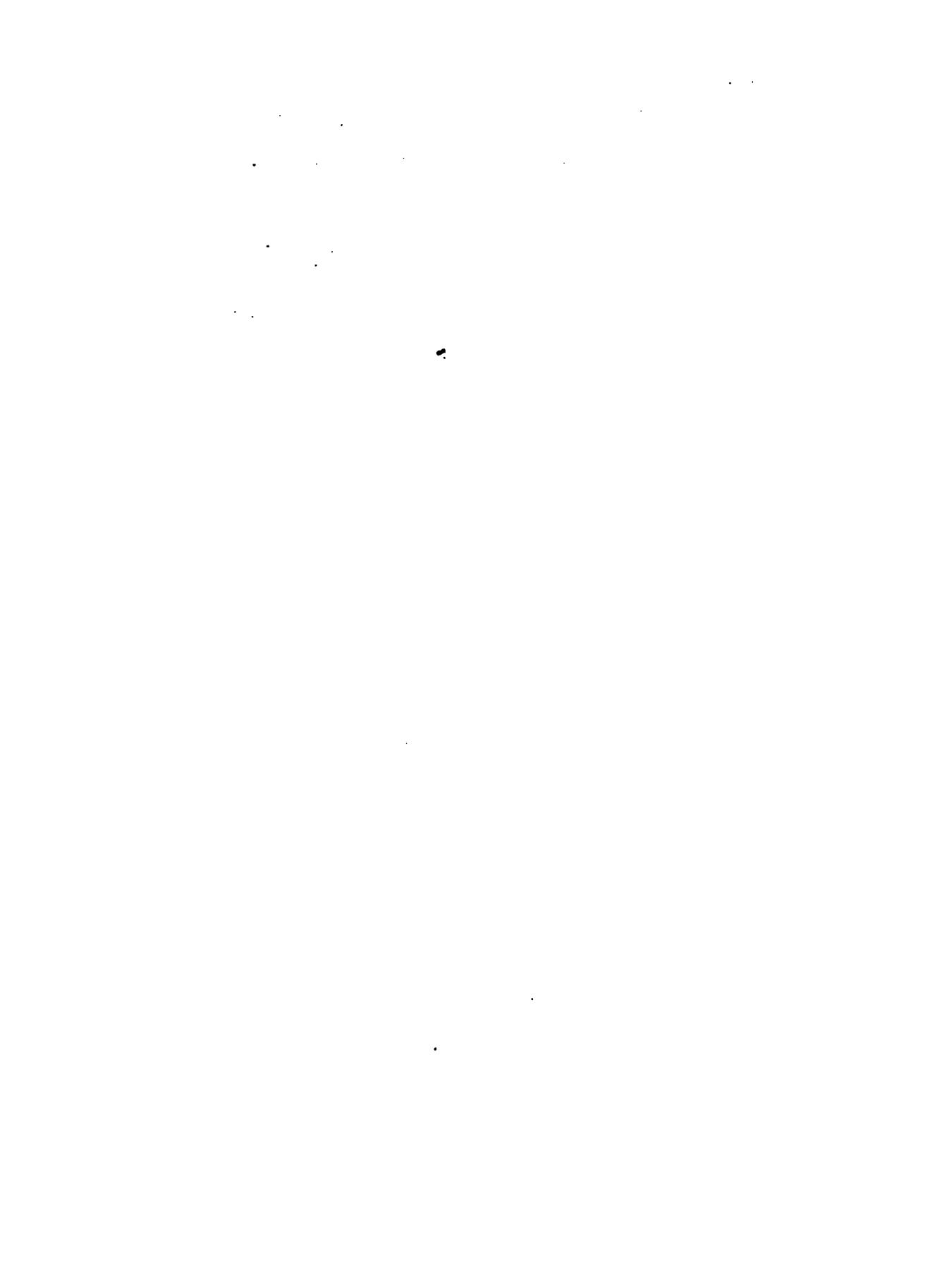
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*Part*

PART I.

[APRIL.

# HOOKER'S ICONES PLANTARUM;

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS  
OF NEW AND RARE PLANTS,

SELECTED FROM THE

## KEW HERBARIUM.

THIRD SERIES.

EDITED BY

JOSEPH DALTON HOOKER, M.D., F.R.S. L.S.A. & G.S.,

OC.E. OXON., LL.D. CANTAB., OXFORD, MEMP. 1859. OMNIO.

VOL. IV.,  
OR VOL. XIV. OF THE ENTIRE WORK.

WILLIAMS AND NORGATE,  
14, HENRIETTA STREET, COVENT GARDEN, LONDON;  
AND 20, SOUTH FREDERICK STREET, EDINBURGH.

1880.



PART II.]

[FEBRUARY.

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RT III.]

[OCTOBER.

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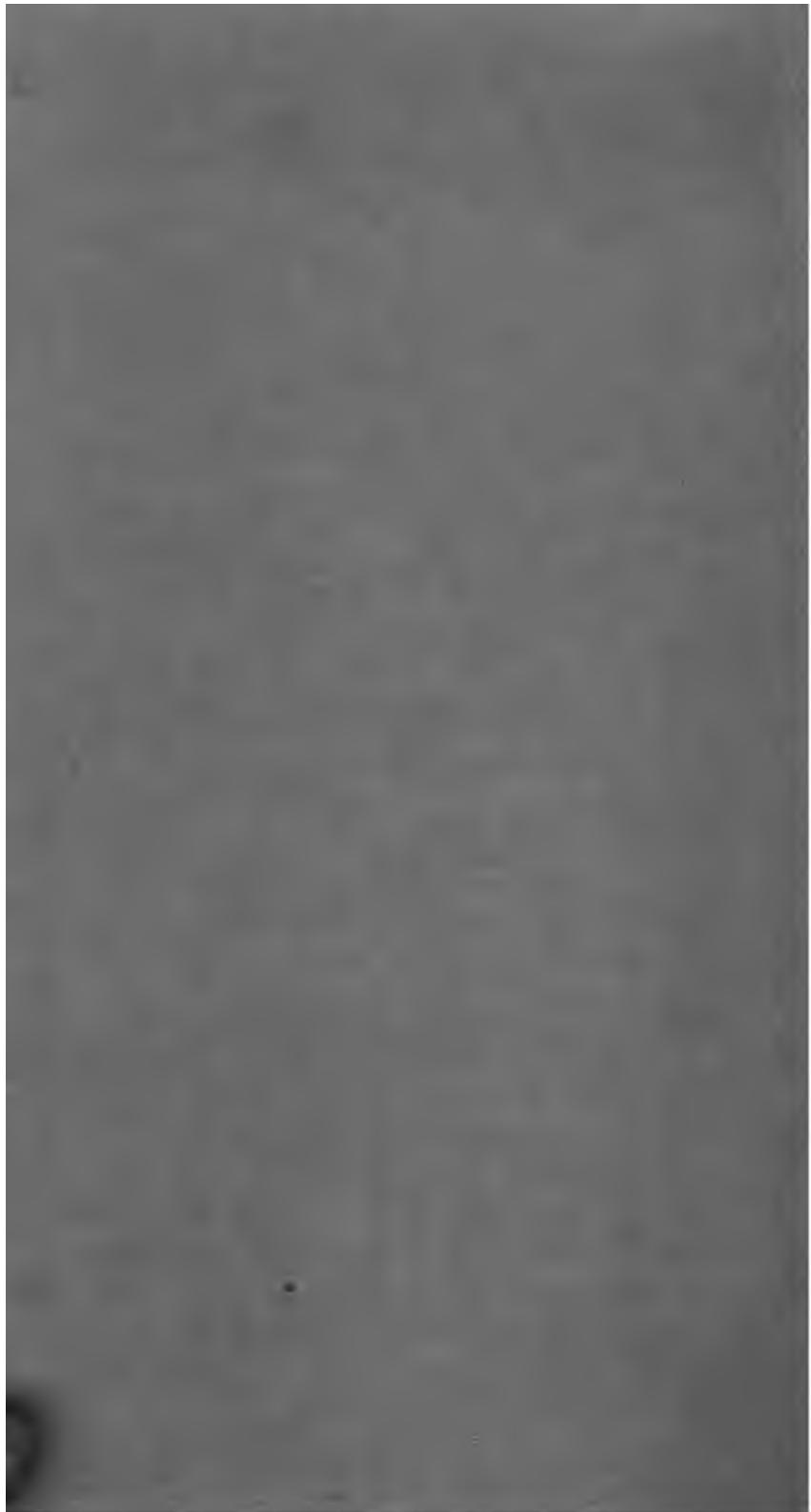
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PART IV.]

[JUNE.

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OF NEW AND RARE PLANTS,

SELECTED FROM THE

## K E W   H E R B A R I U M .

### — — — — — T H I R D   S E R I E S . — — — — —

EDITED BY

SIR JOSEPH DALTON HOOKER, K.C.S.I., C.B., M.D., F.R.S.

D.C.L. OXON., LL.D. CANTAB. AND GIOTT., CORRESP. MEMB. INST. FRANCE :  
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WILLIAMS AND NORGATE,  
14, HENRIETTA STREET, COVENT GARDEN, LONDON ;  
AND 20, SOUTH FREDERICK STREET, EDINBURGH.  
1880-1882.

This and the species figured in the following plate form a new genus, now first published in our 'Genera Plantarum,' and belonging to an order previously unknown in Africa. The genus is closely allied to the American genus *Siparuna*, and has probably the same fruit, but appears sufficiently distinct in its alternate leaves and very peculiar perianth.—G. BENTHAM.

Plate 1301, Male plant. Fig. 1. Perianth. 2. The same seen from above, the long point of the limb cut away. 3, 4. Stamens.

## PLATE 1302.

### GLOSSOCALYX BREVIPES, Benth.

MONIMIACEÆ, Tribe ATHEROSPERMEE.

**G. brevipes**, Benth., sp. n. foliis brevissime petiolatis basi oblique subcordatis, perianthii lobo majore tubo duplo v. vix triplo longiore.

HAB. Cameroon river, West tropical Africa, Mann, n. 722 and 2196.

Frutex 10-pedalis. Specimina primo aspectu iis *G. longicuspidis* simillima, sed folia omnia integerrima videntur, paullo minorâ, acumine breviore et basi rotundato-subcordata plus minus inæqualia, petiolo 1 v. vix 2 lin. longo. Flores minores, in fasciculo præsertim masculi numerosiores, pedicello vix 2 lin. longo, perianthii dentibus 2-labis minus inæqualibus, acumine vix 2 lin. excedente.—G. BENTHAM.

Plate 1302, Female plant. Fig. 1. Perianth. 2. Perianth-tube, longitudinal section, showing the manner in which the carpels are included in the fleshy disk. 3. Perianth seen from above, the long point cut away.

## PLATE 1303.

### LORANTHUS MANNII, Oliv.

LORANTHACEÆ.

**L. (§ *Heteranthus*) Mannii**, Oliv., in *Journ. Linn. Soc.* vii. 101, ramis subteretibus, cortice glabro punctato, foliis suboppositis oval-lanceolatis apice obtuse subacuminatis glabris petiolatis, floribus incurvis 4-meris racemosis, racemis axillaribus folio brevioribus, pedicellis

*patentibus calycem sequantibus, bracteis minutis, petalis linear-lanceolatis basi leviter dilatatis, antheris continuis linearibus multilocellatis.*

HAB. Island of St. Thomas, alt. 5,000 ft., *G. Mann*!

*Folia 2-3 poll. longa,  $\frac{3}{8}$ -1 poll. lata tenuiter coriacea; petiolus  $\frac{1}{6}$ - $\frac{1}{3}$  poll. longus. Flores  $\frac{1}{2}$  poll. longi saepius curvati.*—D. OLIVER.

Fig. 1. Flower. 2. Petal and adnate stamen.

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### PLATE 1304.

#### LORANTHUS CURVIFLORUS, *Benth.*

##### LORANTHACEÆ.

*L. (§ Plicopetalus) curviflorus, Benth.*, ramulis teretibus, foliis alternis linear- v. spathulato-oblongis obtusis, floribus axillaribus incurvis umbellatis, umbellis breviter pedunculatis 4-7-floris, calycis limbo sub-integro tubo turbinato, petalis liberis superne attenuatis basi dilatatis intus plicis utrinque 3-5 obliquis elevatis instructis, antheris continuis longe linearibus, stigmate obtuso subcapitato.

HAB. Abyssinia, *Plowden*! and, apparently the same, Somali Coast, *Dr. Kirk*!

*Folia 1-2 poll. longa,  $\frac{1}{6}$ - $\frac{1}{3}$  poll. lata. Pedunculi  $\frac{1}{8}$ - $\frac{1}{4}$  poll. longi; pedicelli sequilongi, apice breviter cupulatim dilatati bractea carnosula parva lateraliter gibbosi. Flores 1 $\frac{1}{2}$ -1 $\frac{1}{4}$  poll. longi, incurvi.*

This species belongs to the section *Plicopetalus*, Bentham ('Genera Plantarum,' iii. 208), which includes also *L. undulatus*, E. Mey. of the Cape of Good Hope.—D. OLIVER.

Fig. 1. Flower. 2. Petal and adnate stamen.

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### PLATE 1305.

#### EUPHORBIA ZAMBESIANA, *Benth.*

##### EUPHORBIACEÆ, Tribe EUPHORBIÆ.

*E. (Anisophyllum, § Pleiadeneæ) zambesiana, Benth., sp. nov., glabra, rhizomate crasso, caulis numerosis pumilis ramulosis, foliis parvis*

oppositis squamiformibus v. superioribus ovato-oblongis integerrimis, stipulis minimis, involucris pedicellatis terminalibus v. pseudo-axillaribus hemisphaericis brevissime lobatis, glandulis transverse oblongis, appendice lata alba petaloidea varie lobata involucro ipso sublongiore, capsula brevi.

HAB. East tropical Africa on the Zambesi, Zomba, and east end of Lake Shirwa, *Livingstone's Expedition*; Shire highlands, Buchanan.

*Caulis* e rhizomate crasso carnosulo dense cæspitosi, erecti, in speciminiibus floridis 1-2-pollicares, adsunt tamen hinc inde vetustiorum reliquiæ 3-4-pollicares, laxè ramosi. *Folia* inferiora squamiformia, superiora ovata v. oblonga, acutiuscula, 2-3 lin. longa, v. in speciminiibus vegetioribus paris summi lanceolata subsemipollicaria, basi breviter contracta, vix tamen obliqua. *Involucra* ad apices ramulorum supra par summum pedicello 1-3 lin. longo fulta, nonnulla (ramulo aphylo) axillaria apparent pedicello semipollicari v. longiore, 1- $\frac{1}{2}$  lin. diametro, levia, lobis sepiissime 5 minimis triangularibus v. denticulatis. *Glandulae* transverse oblongæ, majuscule, appendicibus petaloideis valde conspicuis albis late patentibus irregulariter et obtuse 2-4-lobis. *Bracteolæ* intra involucrum lineares, laceræ, irregulariter connatæ. *Flores* masculi subinclusi, foeminei breviter exsertus, glaber, stylis 2-fidis recurvis breviter connatis. *Capsula* matura nobis deest.

This curious little species is totally unlike any other African or Asiatic species, but comes very near to the South Brazilian *E. penttiloides* and *E. chamaerhodos*, Boiss., figured in that author's splendid 'Icones Euphorbiarum,' tt. 24 and 25, although specifically distinct from both either in the involucrum or in the styles. There are several specimens from each of three different localities, but all very similar to each other.—G. BENTHAM.

Fig. 1. Involucrum. 2. The same opened out, showing the dorsal glands. 3. Male flowers with the bracteoles turned down. 4. Female flower.

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## PLATES 1306, 1307.

### MUSANGA SMITHII, R. Br.

#### URTICACEÆ, Tribe CONOCEPHALEÆ.

**M. Smithii, R. Br. in Benn. Pl. Jav. Rar. 49, single species.**

HAB. Tropical Africa, on the Congo, *Chr. Smith*; Sierra Leone, *Barter*, *Mrs. Mair*; Fernando Po, *Barter*, *Mann*; and apparently the same species on the Kussumbo, Monbuttu Land, *Schweinfurth*, n. 3205.

*Arbor pulcherrima*, 40–80-pedalis, coma patente, ramulis crassis. *Folia alterna*, longe petiolata, ampla, peltata, fere ad basin radiatim divisa, segmentis 11–15 anguste oblongis breviter acuminatis basi longiuscule contractis interdum ultrapedalibus 2–3 poll. latis, glabris puberulisve supra viridibus subtus albidiis integerimis subtus parallele penniveniis, venulis transversis tenuissimis. *Stipulae* in unam intrapetiolarem membranaceo-coriaceam 4-pollicarem extus tomentosovillosam intus longe sericeo-villosam inflorescentias juniores includentem coalitae, caducissimae. *Paniculae* ♂ ad axillas solitariae, pedunculatae, 3–4-pollicares, repetito-ramosissimae, florum capitulis numerosis globosis vix 2 lin. diametro. *Flores* in capitulo sessiles ad axillas bractearum stipitatarum apice subpeltato-dilatatarum. *Perianthium* tubulosum, apice truncatum. *Stamen* 1, filamento recto, anthera breviter exserta. *Flores* ♀ in massas ovoideas v. obovato-oblongas 2-pollicares ad axillas geminatim pedunculatas dispositi, in capitulo sessiles, numerosissimi, arctissime conferti. *Perianthium* linear-clavatum, vertice foramine minuto pertusum. *Ovarium* sessile, ovulo unico a basi erecto, stylo filiformi e perianthio breviter exerto. *Achenium* perianthio parum aucto fibroso-carnoso apice crasso inclusum, pericarpio duro nitido. *Semen* pericarpio conforme, erectum, testa membranacea; albumen tenuis; cotyledones oblongae aequales, radicula brevi supera.—G. BENTHAM.

Plate 1306, Male plant. Fig. 1. Perianth and bract. 2. Bract. 3. Perianth split open, showing the stamen.

Plate 1307, Female plant. Fig. 1. Perianth. 2. Perianth and ovary, longitudinal section. 3. Achene. 4. Seed. 5. Embryo.

## PLATE 1308.

### **GANOPHYLLUM FALCATUM, Blume.**

#### ANACARDIACEAE.

##### **G. falcatum, Blume, Mus. Bot. Lugd. Bat. i. 230.**

Foliis 9–14-foliolatis glabris nitidis; foliolis alternis breviter petiolatis oblique ovato-lanceolatis saepius breviter et obtuse acuminatis integerimis, paniculis axillaribus folio brevioribus pedunculatis, pedicellis calycem aequalibus, laciniis calycinis ovatis, staminibus (in fl. ♂) exsertis, drupis exsuccis ellipsoideis apiculatis.—F. v. Mueller, Fragm. vii. 24.

HAB. Indian Archipelago, Blume and others; Carpenteria, R. Brown (Herb. 5492)! Port Darwin, Schultz! Port Denison! Rockingham Bay and Torres Straits (F. v. Mueller, l. c.).

*Arbor glabra innovationibus sepius balsamo obductis. Folia  $\frac{3}{4}$ -1 ped. longa; foliola  $1\frac{1}{2}$ -3 poll. longa,  $\frac{3}{4}$ - $1\frac{1}{2}$  poll. lata. Drupa  $\frac{1}{2}$  poll. longa utrinque acutata. Cotyledones incumbentes plicato-incurva carnosæ.*

This interesting addition to the Australian flora has been well and fully described by the Baron von Mueller (*l. c.*), who points out that fruiting specimens (of which we had then only very imperfect fragments) were referred to *Euroschinus falcatus*, Hk. f., in Benth. *Flora Australiensis*, i. 490.—D. OLIVER.

Fig. 1. Stamine flower. 2. Rudiment of pistil from same. 3 and 4. Side and front views of embryo.

## PLATE 1309.

### LORANTHUS KIRKII, Oliv.

#### LORANTHACEÆ.

*L. (§ *Acrostachys*) Kirkii, Oliv. in Journ. Linn. Soc. vii. 101, ramulis teretibus cortice glabro striato, foliis alternis v. suboppositis petiolatis, ovatis v. obovato-ellipticis obtusis glabris, floribus 4-meris in racemis multifloris terminalibus elongatis dispositis, pedicellis patentibus, bractea ovata obtusa, petalis liberis basi parum dilatatis, antheris linearibus.*

HAB. Rovuma Bay and Dar Salam, E. tropical Africa, Dr. Kirk!

*Rami* saepe verruculosi. *Folia*  $\frac{3}{4}$ -2 poll. longa,  $\frac{3}{4}$ - $1\frac{1}{2}$  poll. lata; petiolus  $\frac{1}{4}$ - $\frac{1}{2}$  poll. longus. *Racemi* 4-6 poll. longi, breviter pedunculati vel a basi floriferi. *Pedicelli*  $\frac{1}{4}$  poll. longi. *Flores*  $\frac{1}{2}$  poll. longi.—D. OLIVER.

Fig. 1. Flower; the bract usually does not exceed half the ovary in length. 2. Petal and adnate stamen.

## PLATE 1310.

**FARSETIA BURTONÆ, Oliv.**

CRUCIFERÆ, Tribe ALYSSINEÆ.

**F. Burtonæ, Oliv.** in *App. iv. to Capt. Burton's Land of Midian Revisited*, 1879, caulis divaricatis pilis malpighiaceis appressis incanis foliosis, folii linear-i-oblongo-latis acutis basi angustatis utrinque dense pilosis, racemis paucifloris, alabastris lanceolatis acutatis, petalis spathulatis, stigmate breviter bilobulato, siliqua oblonga compressa stylo persistente fere duplo longiore.

HAB. North and Central Midian, *Captain Burton!*

*Herba* basi suffruticosa 6–10-pollicaris, pilis simplicibus mediofixis induita. *Folia* 1–1 $\frac{1}{4}$  poll. longa integra. *Pedicelli* flore breviores. *Sepala* linear-i-oblonga apicem versus angustata, unguis petalorum subæquantia. *Filamenta* edentula. *Ovula* 6–7 subuniseriata. *Siliqua*  $\frac{3}{5}$ – $\frac{5}{6}$  poll. longa;  $\frac{1}{10}$ – $\frac{1}{9}$  poll. lata.

With this interesting new *Farsetia* the name of Captain Burton's most efficient and enthusiastic helpmate may well be associated.—D. OLIVER.

Fig. 1. Sepal. 2. Petal. 3. Stamens. 4. Pistil.

## PLATE 1311.

**ASTROSTEMMA SPARTIOIDES, Benth.**

ASCLEPIADEÆ, Tribe CYNANCHEÆ.

**Astrostemma, Benth., gen. nov.** *Oalyz* parvus, alte 5-fidus, eglandulosus. *Corollæ* tubus calyce sublongior, turbinatus; limbus dilatatus, alte 5-fidus, lobis inflexis conniventibus angustissime contorto-imbri-catis. *Corona* simplex, tubo stamineo affixa, fere ad basin in lobos 5 planos stellato-patentes divisa. *Stamina* basi corollæ affixa, filamentis in tubum brevem latum connatis; antheræ membrana inflexa parva terminatae. *Pollinia* in quoque loculo solitaria, ovoidea, ab apice pendula. *Stigma* vertice planum. *Polliculi* . . . *Frutex* per anthesin

aphyllus, junior folia perpauca parva ferent. Ramuli juncei, apice spicam brevem ferentes, floribus parvia.

**A. spartoides, Benth., single species.**

HAB. Bangarmassing, Borneo, common in holes of trees, looking as if it were truly parasitical, but the roots only line the holes, J. Moltley; also Northern Borneo, Burbidge.

*Fruticulus* epiphyticus, carnosulus, habitu *Sarcostemmatis*. *Folia* in planta juniore v. in ramulis nonnullis brevissimis perpauca, opposita, ovata, semipollicaria. *Rami* floridi aphylli, ramulos emittentes plures junciformes, simplices, 3-6 poll. longi. *Spica* seu racemulus in quoque ramulo terminalis, rhachi 2-3 lin. longa parum incrassata cicatricibus annularibus notata cæterum ebracteata. *Flores* oppositi, vix 2 lin. diametro, pedicello 1 lin. longo fulti. *Fructus* nobis deest.—G. BENTHAM.

Fig. 1. Flower, enlarged. 2. Corona, seen from above; the anthers and glands appearing between the lobes. 3. A pair of pollen-masses with the connecting gland.

PLATE 1312, 1313.

**QUERCUS JENKINSII, Benth.**

CUPULIFERE, Tribe QUERCINEÆ.

**Q. (*Chlamydobalanus*) Jenkinsii, Benth., sp. nov.**, foliis integerrimis subtus pallidis, spicis erectis, masculis paniculato-ramosus, foemineis simplicibus, involucris solitariis, fructiferis subglobosis clausis duris squamarum apicibus conicis undique echinatis, nuce inclusa nec adnata, pericarpio crasso osseo, cotyledonibus crassis laevibus.

HAB. Upper Assam, Griffith, Jenkins; and bordering provinces of Burinah, on the Mogoung river, Griffith.

*Arbor* glabra v. inflorescentia tenuissime tomentella. *Folia* coriacea, oblonga, acuminata, 8-12 poll. longa, 3-5 poll. lata, basi acuta, petiolo  $\frac{1}{2}$ -1  $\frac{1}{2}$  poll. longo, subtus pallida vix tamen incana, venis primariis simplicibus parallelis subtus prominentibus ad utrumque latus costas 12-16. *Stipulae* angustæ, caducæ. *Flores* ut videtur dioici. *Spicas* erectæ, masculæ in panicula longa secus rhachin simplices, numerosæ, foemineæ in axillis superioribus plures, simplices, 6-10-pollicares. *Involucra* foeminae sub bractea minima solitaria, arcte sessilia, sub anthesi 1-1  $\frac{1}{2}$  lin. diametro, squamis numerosis crassis basi connatis, mox ancta globosa undique densissime echinata. *Styli* 3, breviter exserti, crassi, erecto-patentes, apice stigmatosi. *Involucrum fructiferum* globosum v.

vix longius quam latum ad  $1\frac{1}{2}$  poll. diametro, minutissime tomentellum, durum at parum incrassatum, squamarum apicibus conicis v. recurvis valde prominentibus numerosissimis irregulariter zonatis undique echinatum et perfecte clausum. *Nux* inclusa, globosa,  $1\frac{1}{2}$  poll. diametro, ab involucro basi excepta omnino libera; pericarpium osseum, 2 lin. crassum.

This species closely connects the sections *Chlamydobalanus* and *Lithocarpus*, having the woody pericarp of the latter, but the nut entirely free from the involucrum, though enclosed in it, as in *Chlamydobalanus*. Griffith's specimens are males and females in flower and with young fruits; the ripe fruits were received from Jenkins.—G. BENTHAM.

Plate 1313. Male specimen; Plate 1312, Female specimen. 1. Flower, enlarged. 2. The same, the involucrum cut through, showing the perianth and styles. 3. Young fruiting involucra. 4. Ripe fruit. 5. The same, transverse section.

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#### PLATE 1314.

##### QUERCUS MAINGAYI, Benth.

###### CUPULIFERÆ, Tribe QUERCINEÆ.

**Q. (*Lithocarpus*) Maingayi, Benth., sp. n.**, foliis integerrimis subtus pallidis, involucris fructiferis in spica secus rhachin erectam patentibus reflexisve oblongo-turbinatis clausis velutino-tomentellis, lineis paucis vix prominentibus zonatis, vertice depresso demum circumscisso scutiferis, nuce inclusa fere ad apicem adnata, pericarpio crasso duro.

HAB. Penang; found about a mile from the top of the hill, *Maingay*.

*Arbor* procera, ramiculis inflorescentiaque minute ferrugineo-tomentellis. *Folia* 8–10 poll. longa, 4–6 poll. lata, coriacea, breviter acuminata, basi cuneata, petiolo  $\frac{1}{4}$ –1-pollicari, subtus pallida at vix canescens, venis primariis simplicibus parallelis subtus prominentibus ad utrumque latus costæ 15–20. *Flores* nobis desunt. *Pedunculus* fructifer 4–6-pollicaris, erectus. *Involucra* 3–4, matura subsesquipollucaria poll. diametro, ima basi valde attenuata quasi crasse pedicellata, tomento minuto ferrugineo subvelutina, lateribus zonis 2–3 parum prominulis notatis, vertice subplano centro umbonato zonis 2–3 notato demum scutiformi circumscisso deciduo. *Nux* involucro fere ad apicem arcta adnata, pericarpio duro subsuberoso 2–2½ lin. crasso.

Evidently allied to the *Lithocarpus scutigera* of Oudemans, but with a differently shaped fruit, and if that is founded on the *Quercus costata* of Blume, the foliage is also quite distinct.—G. BENTHAM.

PLATE 1315.

## **QUERCUS BECCARIANA**, Bech.

## CULTURE, Tribe QUICQUEX.

**Q. (*Lithocarpus*) Beccariana.**, Benth., sp. n., foliis integerimis subtus pallidis subcanescens, spicis erectis, masculis paniculatis, foemineis simplicibus, involucris foemineis secas rhachin solitariis sessilibus ovoideis v. fructiferis obovoideis lineis parum prominentibus zonatis glabris perfecte clausis, nuce inclusa fere ad apicem adnata, pericarpio duro crasso.

HAB. Borneo, Beccari, n. 3310.

Specimina nostra præter canescentiam minutissinam inflorescentia et pagine inferioris foliorum glabra. Folia oblonga, breviter acuminata, 3-4 poll. longa, 1-1½ poll. lata, basi acuta, petiolo 5-6 lin. longo, coriacea, supra nitidula, venis primariis simplicibus parallelis in pagina inferiore prominulis ad utrumque latus costæ 6-8. Spicæ masculæ pollicares v. terminales longiores, in panicula terminali 6-8, foeminae inferiores simplices, sub fructu 2-3 pollicares. Involucra sub anthesi 2-3 lin. longa, arcte sessilia, glabra, zonis prominulis 6-8 annulata. Styli 3 breves, crassi, ex apice prominuli, stigmatibus terminalibus. Involucrum fructiferum 2-2½ poll. longum. 1½ poll. diametro, vertice non depresso et prominente umbo natum, quam in *Q. Maingayi* crassius, nucem arcte includens et ut videtur omnino indehiscens. Nux sere ad apicem adnata, pericarpio 2 lin. crasso duro.—G. BENTHAM.

Fig. 1. Male flower. 2. Female flower. 3. The same, longitudinal section showing the pistil. 4. Ripe fruit. 5. The same, longitudinal section.

**PLATE 1316.**

**PERSEA NANMU, Oliv.**

LAURINER, § PERSEACEAE

P. (*Phoebe*) *Nanum*, Olie, sp. nov., arbor procera; foliis e basi attenuato-oblanceolatis obtusiusculae acuminatis supra appresse sericeo-pubescentibus, folio vix sequantem in corymbum terminalis sericeo-pubescentibus.

fasciculos florum in pulvinos intumescens; bracteolæ in pulvinis minutæ, subulatae; flores gracile breviter pedicellati. *Perianthium* ♂  $\frac{1}{2}$ – $\frac{3}{4}$  poll. longum, sepalis concavis petalisque erectis; ♀ magis campanulatum, masculo dimidio brevius, sepalis latioribus et petalis abbreviatis, staminodiis 5 subulatis. *Capsulae* in rhachi brevi aggregatede, 3-gono-globosæ,  $\frac{3}{4}$  poll. diametro, pallide, lèves, valvis tenuiter coriaceis. *Semina* parva, orbicularia, valde compressa, testa irregulariter impresso-punctata.

This is certainly a most remarkable species of *Modecca*, if, indeed, it should not form a subgenus characterised by the habit and the curious entire large umbraculiform stigma, in which I see no trace of lobing. The female flowers I have not seen *in situ*, and cannot say whether they are seated on an elongated rhachis like the males; the capsules are certainly aggregated on a short rhachis, but the latter may be only a lower node of what was an elongate one. The prickles of the stem are unique in the genus; they are confined to the thickened angles, which are uniformly corky.—J. D. HOOKER.

Fig. 1. Vertical section of ♂ flower. 2. Petal. 3. Stamen. 4. Vertical section of ♀ flower.—All enlarged.

## PLATE 1318.

### STELLULARIA NIGRICANS, Benth.

SCROPHULARINEÆ, Tribe GERARDIEÆ (BUCHNEREÆ).

*Stellularia*, Benth., gen. nov. *Calyx* tubulosus, 7–8-nervis, dentatus v. breviter 4-fidus. *Corolla* tubus tenuis, rectus, limbus stellato-patens, subæqualiter 5-partitus, lobis undulatis vix levissime imbricatis (2 posticis interioribus?). *Stamina* 4, inclusa, didynama, filamentis brevibus; antheræ 1-loculares, dorso affixæ, rima longitudinali dehiscentes, muticæ. *Style* apice incrassatus stigmatosusque, indivisus; ovula in loculis numerosa. *Capsula* oblonga, corollæ tubo marcescente inclusa, septo contrarie compressa, loculicide dehiscens. *Semina* numerosa (angulata?), in speciminiibus vix matura. *Herbae* erectæ, siccitate nigricantes. *Folia* opposita. linearia. *Flores* in spica terminali sessiles, singuli bractea bracteolisque 2 stipiti.

*S. nigrescens*, Benth. (single species?).

HAB. West tropical Africa, Angola Expedition, Welwitsch, n. 5838.

*Herba* erecta, rigidula, ut videtur annua et verisimiliter in radicibus semiparasitica, pilis brevibus conspersa, siccitate nigricans, ramis oppositis erectis. *Folia* subsessilia, majora  $1\frac{1}{2}$ -pollicaria, fere 2 lin. lata, ramealia minoria et angustiora, omnia integerrima scabro-puberula. *Spica* supra foliorum par ultimum breviter pedunculata, densæ, cylind-

## PLATE 1320.

**LEPTOGONUM DOMINGENSE, Benth.**

POLYGONACEÆ, Tribe TRIPLOAIDÆ.

*L. domingense*, *Benth.* in *Benth. et Hook. Gen. Pl.* iii. 104, single species.

HAB. Island of Santo Domingo, near Agua, San Juan, on edges of savannahs, *Schomburgk*, n. 34 and 122.

*Frutes* arborescens v. arbor parva, ramulis novellis ferrugineo-villosulis, defoliatis reliquiarum ocrearum annulatis. *Folia* alterna, ad apices ramulorum conferta, vix petiolata, elliptico-oblonga, 2-3-pollicaria, acutiuscula v. obtusa, integerrima v. obscure sinuato-crenata, basi contracta, rigidula, pennivenia, venia primariis parallelis valde prominulis, supra scabriuscula, subtus rufescens ad venas puberula. *Ocrea* brevissimæ, interdum ad annulum parum prominentem reductæ. *Spicae* tenues, in innovationibus brevibus ad apices ramulorum inter folia 2-5 pedunculo communi brevi affixa, graciles, erecti v. nutantes, pilis sericeis ferrugineis vestitæ. *Flores* vix 2 lin. longi, sericeo-villosi, secus rhachin spicæ intra bracteolam brevem oblique cupulatam solitarii v. gemini. *Perianthium* anguste tubulosum, alte 6-fidum, lobis angustis, 3 majoribus exterioribus e bracteola exsertis, 3 alternis multo minoribus inclusis. *Stamina* 3, tubo inclusa, lobis minoribus opposita, filamentis brevibus. *Ovarium* globoso-3-gonum, 3-sulcum, loculo centrali parvo; stigmata 3, parva, erecta; ovulum ab apice funiculi erecti pendulum. *Fructus* ignotus.

This curious genus is in many respects allied to *Ruprechtia*, but the flowers are perfectly hermaphrodite, and the ovule suspended from an erect funicle is that of *Brunnichia*.—G. BENTHAM.

Fig. 1. Bracteole, enclosing the flower of which the three longer lobes protrude and subtended by a small bract. 2. Bracteole further advanced, showing the enclosed flower. 3. Flower with a second bud or imperfect flower, the bracteole removed. 4. Flower opened out, showing the stamens and ovary. 5. Stamens. 6. Ovary. 7. The same, longitudinal section showing the ovule and funicle.

## PLATE 1321.

**OXYGONUM ALATUM, Burch.**

POLYGONACEÆ, Tribe EUPOLYGONEÆ.

*P. alatum*, *Burch. Trav.* i. 548, annum, papilloso-scabriuscum v. glabrum, foliis lanceolatis dentatis v. inciso-pinnatifidis, pedicellis 1-3-

nis bractea subdupo longioribus, perianthii fructiferi angulis membranaceo-alatis v. rarius medio cornutis.

HAB. South Africa; Griqualand, on or near the Sand river, a small affluent of the Orange or Gariep river, *Burchell*, *Zeyher*; and on the Orange river, probably in the same neighbourhood, *Barber*.

*Caulis* basi ramosi, tennes at rigidi, ascendentes,  $\frac{1}{2}$ -1 pedales. *Folia* majora latinscule lanceolata,  $1\frac{1}{2}$ -2 pollicaria, irregulariter inciso-pinnatifida, in petiolum contracta, alia multo minora, angusta, dentata v. hinc inde integerrima. *Ocreæ* laxe turbinatæ, membranaceo-scariosæ, truncatae, margine setis nonnullis longiusculis ciliatae v. nudæ. *Flores* inferiores saepe axillares, superiores in racemum longum interruptum aphyllum dispositi, pedicellis intra bracteas ocreiformes dissitas sepius geminis filiformibus 2- $2\frac{1}{2}$  lin. longis; masculi in speciminiibus nostris pauci, perianthio fide *Burchellii* 4-fido, in floribus examinatis ut in hermaphroditis 5-fido, omnes parvi, perianthii lacinias vix linea longioribus. *Perianthii fructiferi* limbus clausus marcescens, tubus auctus 3-4 lin. longus, angulis 3 nunc in alam scariosam  $1\frac{1}{2}$ -2 lin. latam expansus, nunc rarius exalatus, medio v. supra medium dente v. cornu patente instructus.

Meissner, in De Candolle's *Prodromus*, xiv. 38, 39, distinguished two genera, *Oxygonum* and *Ceratogonium*, placed in two different tribes, having misunderstood Burchell's expression (in characterising *Oxygonum*) 'fructus 3-alatus,' which applied to the whole fruit, not to the enclosed achaenium. The other character, the angles of the fruiting perianth winged or toothed only, falls to the ground, as both forms are sometimes seen on the same specimen in *O. alatum*; the form represented in the plate, fig. 2, is very rare. When the tooth or horn is prominent, it is usually below the middle, and sometimes it is continued both above and below into a narrow wing.—G. BENTHAM.

Fig. 1. Hermaphrodite flower. 2. Fruit with toothed angles. 3. Fruit with winged angles. The perianth-limb remains long attached, as in the winged fruit represented still attached to the raceme.

## PLATE 1322.

### DIMORPHOCHLAMYS MANNII, Hook. f.

CUCURBITACEÆ, Tribe CUCUMERINÆ.

D. *Mannii*, Hook. f. in Benth. et Hook. Gen. Pl. i. 827; Oliv. Fl. Trop. Afr. ii. 550.

HAB. Western tropical Africa; Fernando Po, Vogel, Mann; Old Calabar river and Ambas Bay, Mann, Rev. W. O. Thomson.

Dioica. *Caulis* gracilis, scandens, 8–15-pedalis, angulatus, firmus. *Folia* 3–5 poll. longa, petiolata, rigide coriacea, late ovato- v. rotundato-cordata, acuminata, denticulata, utrinque scabrida, subtus reticulatum venosa, sinu basilari aperta; petiolo  $\frac{1}{2}$ – $\frac{3}{4}$ -pollicari. *Cirrhi* simplices v. 2-fidi. *Flores* dimorphi; ♂ ad axillas fasciculati, pedicello (calycisque tubo) in alam obovato-cuneiformem membranaceam reticulatum venosam dilatato; bracteola parvæ, recurvæ. *Calyx* 5-lobus, lobis 3 ovatis, acutis, dorso breviter alatis. *Corolla* campanulata, pollicaris; segmenta 5, ovato-oblonga, acuta, extus furfuracea. *Filamenta* 3, libera, antheræ connatae v. demum liberae, una 1-locularis, duo 2-loculares, loculis linearibus conduplicatis. *Fl.* ♀ solitarii, parvi, pedicellis non alatis. *Calycis* limbus supra ovarium breviter productus; segmenta 5, linearia, patentia, persistentia, demum decrescentia et fructum coronantia. *Corolla* 5-partita, segmentis oblongis extus furfuracea. *Staminodia* 0. *Ovarium* ellipsoideum, furfuraceum; stylus columnaris, stigmatibus 3 peltatis globosis; placentæ 3, multiovulatae. *Bacca* globosa, 2–3 poll. diam., calycis segmentis elongatis rigidis loriformibus pericarpio duro granulato appressis coronata, polysperma. *Semina* magna, pollicaria, oblongo-quadrata, crassa, granulata, utrinque appendiculata et dentata, faucibus planiusculis sulco intramarginali quadrato insculptis, lateribus convexiusculis marginatis; cotyledones crasse.—J. D. HOOKER.

A very singular genus, allied to *Cephalandra*, remarkable for the winged pedicel and calyx of the male flower, and the more singular calyx of the female, which enlarges greatly after flowering, and is persistent in the ripe fruit, a character probably unique in the order.

Fig. 1. Calyx of ♂. 2. Stamens. 3. ♀ flower. 4. Fruit. 5. Seeds.—Figs. 1 and 2 enlarged.

### PLATE 1323.

#### ABROPHYLLUM ORNANS, Hook. f.

SAXIFRAGEÆ, Tribe ESCALLONIEÆ.

**A. ornans**, Hook. f. in Benth. et Hook. Gen. Plant. i. 647; Benth. Fl. Austral. ii. 437.—*Brachynema ornans*, F. Muell. Fragmenta, iii. 90.

HAB. New South Wales; banks of the Grose river, Brown; Mount Tomah, Blue Mountains, A. and R. Cunningham; Richmond river, near Ballena, C. Moore.

*Frutex* ramulis gracilibus petiolis nervis subtus cymisque pubescente hirsutulis. *Folia* 6–12-pollicaria, membranacea, gracile petiolata, elliptico-lanceolata, acuminata, basi attenuata, remote dentata, dentibus apiculatis, supra et subtus nervis exceptis glaberrima, petiolo

2-pollicari; stipulae 0. *Cymæ* pedunculatae, irregulariter ramosæ. *res* pedicellati,  $\frac{1}{2}$  poll. diam. *Sepala* 4-6, decidua. *Petala* 4-6, atæ, patula, decidua, aestivatione valvata. *Stamina* 4-6, margine scæ inconspicui inserta, filamentis brevissimis; antheræ magnæ, tala subæquantes. *Ovarium* basi lata sessile, ovoideo-oblongum, 5-loculare; stigma sessile, 4-5-lobum; ovula in loculis numerosa. *Uva* pisiformis. *Semina* minuta, testa punctata.

As stated by Bentham in the 'Flora Australiensis,' I had described this genus under the above name for the 'Genera Plantarum' (and thæ specific name of *Cunninghamii*) before the arrival at Kew of the third volume of Mueller's 'Fragmenta,' wherein I found it described (all but the fruit) as *Brachynema ornans*; and the name *achynema* being preoccupied, I was compelled to adopt my own generic name, and my friend Mueller's specific one. It is interesting to find that this curious plant had not escaped Brown's keen observation; specimens of it are contained in his Herbarium, collected twenty years ago, during half a century of which they, together with a rest of his magnificent collections, were jealously closed to botanists. The fruit, which in Cunningham's specimens appears to be oblong, is Brown's distinctly globose.—J. D. HOOKER.

Fig. 1. Flower. 2. Stamens. 3. Calyx and ovary. 4. Berry. 5. Transverse section of berry.—All but fig. 4 enlarged.

#### PLATE 1324.

##### PHACELLARIA RIGIDULA, Benth.

SANTALACEÆ, Tribe OSYRIDEÆ.

*P. rigidula*, Benth. in Benth. et Hook. Gen. Pl. iii. 229, caulis teretius rigidulis ramosis.

HAB. East India; Mergui, Griffith.

*Fruticulus* in *Lorantho* quodam parasiticus, caulis dense fasciculatis teretibus ramosis rigidulis 3-5-pollicaribus,  $\frac{1}{2}$  lin. v. majoribus vix lin. crassis glabris aphyllis. *Squamellæ* ad nodos alternæ, minute entiformes v. vix prominentes. *Flores* ad nodos secus ramos sparsi, solitarii v. fasciculati, sessiles, masculi subglobosi  $\frac{1}{2}$  lin. diametro, eminei ovoidei, demum lineam longi. *Perianthii* tubus in flore masculo solidus, in foeminæ ovario adnatus, lobi 4 v. 5, usque ad discum luti, breves, crassi, aestivatione valvati. *Stamina* 4 v. 5, basi loborum affixa iisque breviore, filamentis brevissimis, crassis; antheræ terminales, loculis distinctis divaricatis longitudinaliter dehiscentibus. *discus* subplanus, inter stamna v. inter lobos perianthii angulatus.

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*Ovarium inferum, 1-loculare; stylus brevissimus, crassiusculus, stigmate integro discoideo; placenta in centro loculi brevis, erecta, ovalis 3 ab apice pendulis. Fructus junior ovoideo-oblongus; maturnus adhuc non visus.*

This curious parasite, with the habit of some of the leafless *Viscum*, has nevertheless all the characters of a *Santalaceae*, where its nearest affinity appears to be with the Australian *Leptomeria*.—G. BENTHAM.

Fig. 1. Male flower, seen from above. 2. One of the lobes with the stamen at its base. 3. Female flower. 4. The same, longitudinal section showing the ovary and placentas, with two of the ovules.

### PLATE 1325.

#### **ARAGOA LYCOPODIOIDES, Benth.**

SCROPHULARIACEAE, Tribe DIGITALEE.

**A. lycopodioides**, Benth. sp. nov. ramulis lanatis, foliis glabris lobatis trigonis carinatis acutiusculis incurvo-imbricatis, calycis lobis ovato-ellipticis margine apicem versus lanatis, corolle fauce villosa.

HAB. New Granada, Purdie! Ocaña, Schlim! Kalbreyer!

*Frutex pyramidalis*, 3-6-pedalis, ramosissimus, ramulis teretibus confertis lanatis. *Folia* 1-1½ lin. longa multifariam imbricata. *Flores* breviter pedicellati v. subsessiles  $\frac{1}{2}$ - $\frac{1}{3}$  poll. diam. *Calyx* foliolis concavis coriaceis dorso glabris. *Corolla* rotata, alba, lobis obovatis obtusis, margine glabris. *Stamina* exserta. *Capsula* ovoidea calycem sequans v. superans stylo filiformi persistente coronata.

Differs from *A. abietina* in the lanate branches, much shorter leaves and villous throat of corolla; from *A. cypresina* in the narrow triangular or keeled leaves, which are not closely appressed as in that species.—D. OLIVER.

Fig. 1. Expanded flower. 2. Stamen. 3. Section of calyx, showing pistil. 4. Calyx and capsule. 5. Portion of ultimate twig.

# ICONES PLANTARUM.

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## PLATE 1326.

### LANESSANIA TURBINATA, Baill.

URTICACEÆ, Tribe ARTOCARPEÆ.

*L. turbinata*, Baill. *Adans.* xi. 298.

HAB. North Brasil, in the Capoeiras at Barra do Rio Negro, where it is known under the name of *Mururé*, Spruce, n. 1825.

*Arbor* 20-pedalis, ramulis petiolis venis paginæ inferioris foliorum receptaculisque tomento brevi rufescensibus, succo lacteo sordido. *Folia* alterna, breviter petiolata, elliptico-oblonga, breviter et anguste acuminata, basi rotundata, coriacæ, supra glabra leviuscula pennivenia, venis primariis et rete venularum subtus prominentibus, 3–5 poll. longa, 2–2½ poll. lata; stipulæ parvæ, caducæ. *Receptacula* ad nodos inferiores ramuli hornotini in axillis solitaria, pedicello petiolum vix excedente mox recurvo fulta, anguste turbinata v. obpyramidata, 5–6 lin. longa, carnosula, in vivo basi fulva superne pallida. *Bractæ* circa marginem receptaculi fere tuberculiformes, obscure 2–3-seriatæ. *Flores* ♂ numerosi, apicem explanatum receptaculi obtengentes, arcte conferti, basi subconnati. *Perianthium* tubulosum, carnosulum, brevissime obtuseque 3–4-fidum. *Stamina* 2, rarius 3, filamentis inclusis rectis crassis; anthers parvæ, loculis adnatis. *Ovarii* rudimentum O v. minute subulatum. *Flos* ♀ in centro receptaculi unicns. *Perianthium* a receptaculo carnosò haud distinctum, canalem centralem efficiens. *Ovarium* in fundo receptaculi infernum; stylus intra canalem liber, apice exsertus, ramis stigmatosis elongatis; ovulum ex apice loculi pendulum.

The fruit of this species is unknown, but specimens of what would appear from the foliage and inflorescence to be a nearly allied congener

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have small globular succulent fruits, not yet ripe. They were gathered by Spruce in the Managuiry-gapo, at the mouth of the Solimoes, from a shrub known to the natives by the name of *Caimbé*, and distributed with the n. 1635. Being passed flower, they cannot be named or properly described.—G. BENTHAM.

Fig. 1. Fleshy receptacle, vertical section. 2. A male flower, cut open.

### PLATE 1327.

#### SCYPHOSYCE MANNIANA, Baill.

URTICACEÆ, Tribe AETOCARPEÆ.

S. Manniana, Baill. *Adans.* xi. 293.

HAB. West tropical Africa, Sierra del Crystal, G. Mann, n. 1727.

*Frutex humilis*, caule simplici 6–9-pollicari tomento brevi fuso vestito. *Folia alterna*, breviter petiolata, elliptico-oblonga, acuminata, infra medium angustiora, membranacea v. chartacea, integrerrima v. obscure denticulata, pennivenia, glabra v. subtus ad venas parco scabro-puberula, 3–5 poll. longa. *Stipulae* liberas angustae. *Receptacula* in axillis superioribus solitaria, pedicello petiolum breviter superante fulta, tubuloso-cupulata, 1½ lin. longa, basi florifera carnosula, parte superiore v. limbo cupulato membranacea, margine breviter 4–5-loba. *Flores* ♂ in fundo receptaculi pluri-seriati, apice exserti. *Perianthium* anguste tubulosum, obtuse minuteque 2–4-dentatum. *Stamen* 1, filamento recto; anthera oblonga, erecta, exserta. *Ovarii* rudimentum 0. *Flos* ♀ in centro receptaculi unicus. *Perianthium* e segmentis 2 distinctis latis uno alterum pistillumque involvente, perianthio masculo squilongum. *Ovarium* superum, sessile; stylus subulatus, primum centralis, demum fere lateralis, ramis stigmatosis exsertis subfiliformibus; ovalum apice oblique affixum, pendulum. *Fructus* junior ovoido-globosus, nitidus, receptaculi limbo deciduo denudatus, reliquis florum masculorum cinctus.

This interesting plant, allied in some respects to *Bosquiea* of Thouars, is described on the collector's label as herbaceous, probably from its small stature; for the stem, though simple and often not even six inches high above the rooting base, appears certainly perennial and woody in the lower portion.—G. BENTHAM.

Fig. 1. Head of flowers, vertical section, showing the fleshy base of the receptacle and several male flowers with the central female one, the two perianth segments opened out and partially cut away to show the ovary and style. 2a. Male flower. 2b. Stamen.

## PLATE 1328.

**BRUNNICHIA AFRICANA, Welw.**

POLYGONACEÆ, Tribe COCCOLOBEÆ.

**B. africana**, *Welwitsch* in *Trans. Linn. Soc.* xxvii. 61, scandens, ramulis striatis puberulis, foliis ellipticis apiculatis basi cuneatis subrotundatis petiolatis, cirrhis axillaribus apice bifidis, floribus fasciculatis in racemis simplicibus terminalibus dispositis, pedicellis plano-compressis fructiferis accrescentibus bialatis alis subæqualitatis fere ad basin pedicelli decurrentibus.

HAB. Golungo Alto, Angola, Dr. Welwitsch!

*Frutex* gracilis, ramulis patentibus, late scandens. *Folia* 2½-3½ poll. longa, 1½-2 poll. lata, membranacea; petiolus ¼-½ poll. longus. *Cirrhi* graciles folio longiores. *Racemi* ¼-½ ped. longi, fructiferi pedales, glanduloso-puberuli; bractæ 2-5-floræ. *Fructus* ovoidens costulatus perianthii lobis persistentibus coronatus; pedicelli fructiferi 2-3 poll. longi; alæ 1½ lin. latæ.

Fully described by Dr. Welwitsch (*l.c.*). 'Differs from *B. cirrhosa* in the form of the leaves, and more especially in the long winged pedicel, the wings nearly equal on each side, not confined to one side or nearly so, as in *B. cirrhosa*.—D. OLIVER.

Fig. 1. Flower. 2. Same laid open and enlarged. 3. Stemens. 4. Fruit and alate pedicel.

## PLATE 1329.

**ROSA ECÆ, Aitchison.**

ROSACEÆ, § ROSEÆ.

**Rosa Ecæ**, *Aitchison* in *Journ. Linn. Soc. Bot.* xviii. 54, humiliæ aculeatissima, aculeis homomorphis rectis rigidis patentibus basi plus minus dilatatis, foliis parvulis 5-7(-9)-foliolatis parce glandulosis, floribus aureis solitariis pedunculatis, fructu globoso glabro nitido calycis lacinia reflexis coronato.

HAB. A common and characteristic shrub from Habibkalla to Alikhél, Afghanistan, 'forming with *Amigdalus eburnea* the greater part of the scrub on the stony ridges of the Hariáb district.'

*Frutex* erectus 3-4-pedalis, ramosus; ramis gracilibus glabris junioribus ruberrimis; aculeis in ramis floriferis confertis ¾-½ poll. longis. *Folia* ½-1 poll. longa; foliola obovata v. elliptica serrata glabrata v. subtus parce glandulosa; stipulae parvae. *Flores* ¾-1 poll.

diam.; pedunculi  $\frac{1}{2}$ - $\frac{3}{4}$  poll. longi, glabri; calycis segmenta oblongo-lanceolata indivisa vel apicem versus denticulata intus plus minus albido-sericea. *Fructus*  $\frac{1}{2}$ - $\frac{3}{4}$  poll. diametro; achænia glabrate, stylis persistentibus villosissimis.

The characters of this very interesting yellow Rose are chiefly taken from Dr. Aitchison's paper cited above, with the specimens before me.  
—D. OLIVER.

### PLATE 1330.

#### PENIANTHUS LONGIFOLIUS, Miers, fl. ♂.

#### MENISPERMACEÆ.

*P. longifolius*, Miers in *Ann. Nat. Hist. ser. iii. xiii.* 124; *Contrib. Bot.* iii. 372, t. 149. Frutex glaber; foliis obovato-ellipticis obtusiusculæ acuminatis basi sepe plus minus cuneatis longe petiolatis, floribus ♂ in glomerulis subglobosis multifloris sessilibus v. breviter pedunculatis confertis, perianthii segmentis liberis 6 v. 5 obovatis biseriatis, exterioribus paullo brevioribus, staminibus liberis 6 v. 5, filamentis leviter superne dilatatis, antheris bilocularibus longitudinaliter dehiscentibus perianthio subbrevioribus.

HAB. Cameroons Mountains, 500 feet. (Fl. ♀, Fernando Po).  
*Gustav Mann.*

*Folia* tenuiter coriacea 5-7 poll. longa,  $2\frac{1}{2}$ - $3\frac{1}{2}$  poll. lata, petiolus ad 2 poll. longus sulcatus supra canaliculatus, apice incrassatus. *Glomeruli floriferi*  $\frac{1}{2}$  poll. diam.

The female flowers are described by Mr. Miers (*Contrib. l.c.*), and in 'Flora of Tropical Africa' i. 50. The specimens now described, bearing staminate flowers, had been sorted away in Artocarpeæ, and so were not at hand when I described the plant in 1868.—D. OLIVER.

Fig. 1. Detached flower. 2. Stamen and opposed inner perianth-segment.

### PLATE 1331.

#### CEPHALANTHUS NATALENSIS, Oliv.

#### RUBIACEÆ, Tribe NAUCLEÆ.

*C. natalensis*, Oliver, sp. n., ramosissimus, ramulis ultimis puberulis, foliis ovatis v. ovato-ellipticis breviter acuminatis acutis v. obtusiusculis glabratis v. costa subtus petioloque puberulis, capitulis terminalibus.

breviter pedunculatis, calycis limbo supra ovarium producto obtuse dentato, corolla tubulosa superne infundibuliforme dilatata.

HAB. Natal, Gerrard (1495); Transvaal, Dr. Atherstone.

*Folia*  $\frac{1}{2}$ - $1\frac{1}{2}$  poll. longa, tenuiter coriacea, rete venularum inconspicuo; petiolus 1 lin. longus. *Capitula* globosa florifera 1 poll. diam.; pedunculus  $\frac{1}{2}$ - $\frac{1}{3}$  poll. longus, pubescens. *Corolla*  $\frac{1}{3}$  poll. longa, tubo inferne gracili fere glabro, ore sepe leviter obliquo. *Antheræ* vix exsertæ linear-i-oblongæ mucronulatæ. *Stylus* longiuscule exsertus, apice clavatus.

The fruit-heads are said to become sufficiently succulent to be edible.—D. OLIVER.

Fig. 1. Detached flower. 2. Longitudinal section of ovary and calyx-tube.

## PLATE 1332.

### CARMICHAELIA KIRKII.

LEGUMINOSÆ, Tribe GALEGEÆ.

C. Kirkii, Hook. f. n. sp.; sparse pilosa, ramis gracillimis cylindraceis sulcatis, foliis 3-5-foliolatis, foliolis orbiculari-obcordatis, racemis 3-5-floris, floribus  $\frac{1}{2}$  poll. longis, longe pedicellatis, legumine ellipsoideo turgido longe rostrato.

HAB. NEW ZEALAND: Otago, prov., in the Cardrona Valley, T. Kirk; Otapopo, M. Petrie.

Laxe ramosa, ramis ramulisque sparsis divaricatis, ramulis petiolisque tenuiter sericeis v. pilosulis. *Folia* sparsa, petiolo cum rachi  $\frac{1}{2}$ -1 poll. longo, foliolis  $\frac{1}{2}$ - $\frac{1}{4}$  poll. longis glaberrimis sinn acuto lobis rotundatis. *Pedunculi* foliis æquilongi v. breviores gracillimis floribus pedicellatis, bracteolis ciliatis. *Calyx* campanulatus, glabratus, dentibus intus sericeis acutis. *Vexillum* orbiculare, 2-lobum; carina falcata alis spathulatis breviore. *Ovarium* glaberrimum. *Legumen*  $\frac{1}{2}$  poll. longum, rostro valido recto pungente 2-spermo, valvis obscure reticulatis, replo crasso lato laevi.

This differs from all the described species of *Carmichaelia* in the very slender habit, cylindric lax spreading almost filiform branches, large flowers and long beaked pod. It forms the tenth species of a genus long supposed to be peculiar to New Zealand, but of which one species has been found in Lord Howe's Island, the vegetation of which, as indicated by its position, shows the characters of those of Australia and New Zealand. I have named it after Mr. Thomas Kirk, F.L.S., of

Wellington, New Zealand, its discoveror, who, with Mr. Cheeseman, of Auckland, have added more to our knowledge of the New Zealand Flora than any botanists of late years.—J. D. HOOKER.

Fig. 1. Flower. 2. Wing. 3. Ovary. 4. Seed. 5 and 6. Embryo. All enlarged.

### PLATE 1333.

#### *ERYTHROSPERMUM POLYANDRUM*, Oliv.

##### BIXINEÆ.

**E. polyandrum**, Oliver, sp. n., glaberrimum, foliis oblongis v. ovalioblongis breviter acuminatis basi obtusis subintegerrimis petiolatis, floribus polygamis racemosis racemis terminalibus v. in axillis superioribus approximatis, pedicellis solitariis geminis ternis basi bracteolatis, staminibus circ. 15 uniseriatis, ovario oblongo-ovoideo superne angustato, stigmate 4-fido.

HAB. Samoa, Rev. T. Powell.

*Arbor* ut videtur glaberrima, ramulis teretibus lœvibusque. *Folia* tenuiter coriacea 6–9 poll. longa, 2–3½ poll. lata; petioli ½–¾ poll. longi. *Racemi* 6 poll. longi pedunculati; pedicelli ½–¾ poll. longi. *Flores* ½ poll. lati; sepala rotundata v. obovato-rotundata concava imbricata petalis paullo breviora; petala obovata inappendiculata. *Stamina* libera 15–16 glabra, filamentis subulatis crassiusculis, antheris longitudinaliter dehiscentibus oblongis v. lanceolato-oblongis recurvis basi sagittatis, connectivo incrassato. *Ovarium* glabrum; ovula indistincta, placentæ 4.

We have young specimens of probably the same plant from Samoa, sent by Rev. Mr. Whitmee.—D. OLIVER.

Fig. 1. Bud. 2. Flower. 3. Stamens. 4. Pistil. 5. Transverse section of ovary.

### PLATE 1334.

#### *LANIUM MICROPHYLLUM*, Lindl.

##### ORCHIDÆ, Tribe EPIDENDREÆ (Stenoglossæ).

**L. microphyllum**, Lindl. MS., caulis brevibus non incrassatis foliosis, foliis distichis angustis carnosis, racemo simplici.—*Epidendrum (Lanium) microphyllum*, Lindl. in Hook. Journ. Bot. iii. 85.

HAB. British Guiana, Schomburgk. Surinam, Hostmann, n. 626.

*Rhizoma v. caudex reptans radicans, vaginis brevibus laxis obtectum. Caules absque inflorescentia 1-2-pollicares, carnosuli at non in pseudobulbas incrassati. Folia 4-8, alterna, disticha, in vaginis sessilia, recurvo-patentia, crassa, fere 3-quetra, acuta, semipollicaria. Racemus terminalia, simplex cum pedunculo 1-2½ poll. longus, tomento minuto pallescens. Flores subsecundi, parvuli, viridi-purpurascens, pedicellis perianthio brevioribus v. paullo longioribus, bractea breviore subtensis. Perianthii segmenta ad 2½ lin. longa, patentia; sepulum posticum lineari-lanceolatum subincurvum, lateralia paullo latiora basi columnæ tubo breviter adnata; petala sepalum postico paullo angustiora. Columna brevis, marginibus membranaceis cum labeili basi in tubum connatis. Labelli lamina sepalis æquilonga, erecto-patens, late lanceolata, concava, acuta, indivisa, basi secus lineam centram 2-lamellata. Antherarum loculi septo transverso 2-locellati. Pollinia 4, in locellis antheræ segregata, inferiora longiuscule, superiora brevius, acuminata, apicibus visco parparo connexis.*

This, and the species illustrated in the following plate, form a very distinct group of Orchidæ which Lindley had originally intended to establish as a genus, but which he finally (induced probably by the union of the base of the labellum with the column) entered as a section or subgenus of *Epidendrum*. The pollinary apparatus is, however, as observed by Focke, so totally different from that of *Epidendrum* that it was impossible to retain the two species in that genus without doing violence to its character. It is in fact very nearly allied to that of the Liparidæ, but upon the whole the genus seems best placed in our subtribe Stenoglossæ.—G. BENTHAM.

Fig. 1. Flower, magnified. 2. Labellum and column (without the anther) seen from above. 3. Anther-case, showing the four locelli. 4. The two pollen-masses of one cell.

## PLATE 1335.

### LANIUM AVICULA, Lindl.

ORCHIDÆ, Tribe EPIDENDRÆ (Stenoglossæ).

**L. Avicula**, *Lindl. MS.*, caulis pseudobulbosis apice 2-foliatis, foliis in pseudobulbo sessilibus planis ovatis, panicula ramosa.—*Epidendrum (Lanium) Avicula*, Lindl. in Hook Journ. Bot. iii. 85.

HAB. Brasil, Organ Mountains, growing in dense tufts on the stems and branches of trees, Gardner, n. 625.

*Caules* in pseudobulb ovoido-globosum semipollicarem foliis 2 coronatum incrassati, basi squamis 1-2 latis brevibus vaginati.

*Folia sessilia ovata, patentia,  $\frac{1}{2}$ -1-pollicaria, plana, carnosula. Pedunculus inter folia terminalis, cum inflorescentia 3-4-pollicaris, in ramos paucos divisus, paniculam laxe pyramidatam formans. Flores iis L. microphylli similes nisi paullo maiores pedicellis sublongioribus; bractæ minimæ. Perianthii segmenta et labellum omnino L. microphylli. Anthera eadem excepto septo loculos dividente obliquo nec transverso, et polliniorum acumina minus inæqualia, et (saltē in floribus examinatis) libera nec visco connexa.—G. BENTHAM.*

Fig. 1. Flower, magnified. 2. Anther-case with three of the pollen-masses still in it. 3. Two pollen-masses.

## PLATE 1336.

## THESPESIA DANIS, Oliv.

MALVACEÆ, Tribe HIBISCÆ.

*T. Danis*, Oliver, sp. nov. — Frutex v. arbuscula, ramulis ultimis teretibus parce lepidotis, foliis rotundatis integris apice internum apiculatis basi cordatis v. late truncatis, parce v. præcipue in petiolo lepidotis, pedunculis axillaribus 1-2 pollicaribus, calyce turbinato-campanulato truncato lepidoto, bracteolis 3 ovato-lanceolatis patentibus, floribus  $1\frac{1}{2}$ -2 poll. diam., petalis obovato-cuneatis dorso medio lepidotis, ovario 8-loculari, fructu ut videtur baccato v. tarde dehiscente.

HAB. Ribe, Nyika country, East tropical Africa; also in the Galla country, where it is held as 'sacred,' and called 'Dānis.'—Ker. T. Wakefield.

*Folia*  $2\frac{1}{2}$ - $3\frac{1}{2}$  poll. lata, submembranacea; petiolus  $\frac{1}{2}$ - $1\frac{1}{2}$  poll. longus. *Bracteolæ*  $\frac{3}{4}$ - $1\frac{1}{2}$  poll. longæ. *Fructus* subglobosus  $\frac{3}{4}$ -1 poll. diam.

To the same species, I take it, must be referred specimens sent home by Dr. Kirk and Hildebrandt (No. 1929) from the Zanzibar coast. Hildebrandt's specimens are remarkable from their large bracteoles, about 1 inch in length, but they seem to be variable in Mr. Wakefield's specimens. An allied plant, much more lepidote and with broad bracteoles, Dr. Kirk sent from the Somali coast, probably a variety of the same.—D. OLIVER.

Fig. 1. Calyx and bracteoles. 2. Anthers. 3. Stigma. 4. Transverse section of ovary.

## PLATE 1337.

**MICRONYCHIA MADAGASCARIENSIS, Oliv.**

## ANACARDIACEÆ.

**Micronychia, Oliver, gen. nov.**—Flores polygami. Calyx parvus 5-partitus. Petala 5 ovato-oblonga calyce multo longiora, sestivations imbricata. Stamina (in fl. ♀) 5, petalis alterna, disco hypogyno exteriora. Ovarium glabrum lateraliter compressum, obliquum; stylo ovario æquilongo apice breviter trifido, stigmatibus obtusis; ovulum solitarium prope apicem cavitatis pendulum. Fruct. . . .—*Arbor v. frutesc?* ramulis ultimis ferrugineo-hirtis, foliis alternis simplicibus petiolatis exstipulatis; paniculis multifloris folio longioribus arcte deflexis ramulis lateralibus alternis patentibus. Flores pedicellati penduli.

**M. madagascariensis, Oliv. sp. n.** Single species.

HAB. Tanala, Madagascar, Langley Kitching.

Folia ovali- v. oblanceolato-oblonga obtusa v. obtusiusculæ acuminate, coriacea, supra glabra subtus in costa et in venulis primariis prominentibus hirtella,  $1\frac{1}{2}$ –4 poll. longa,  $\frac{2}{3}$ – $1\frac{1}{2}$  poll. lata; petiolus hirtus  $\frac{1}{2}$ –1 poll. longus. Paniculæ sessiles ferrugineo-hirtæ, ramulis divaricatis bracteatis, bracteolis linearibus appressis; pedicelli dependentes 1–2 lin. longi, bracteolis minutis. Flores  $\frac{1}{2}$  poll. longi. Calyx hirsutus. Petala (sicco rubiginosa) dorso minute pubescentia.—D. OLIVER.

Fig. 1. Flower. 2. Same, the petals removed. 3. Anthera. 4. Style and stigmas. 5. Vertical section of ovary.

## PLATE 1338.

**GAMBLEA CILIATA, C. B. Clarke.**

## ARALIACEÆ, Tribe HEDEREÆ.

**Gamblea, C. B. Clarke in Hook. f. Fl. Brit. Ind. ii. 739.**—Flores polygami, ebracteati. Calycis margo brevissimus. Petala 5, valvata. Stamina 5. Ovarium 3–5-loculare; styli 3–5 usque ad dimidiam partem coadunati. Fructus globosus, proventu glaber, 3–5-locularis. Semina haud compressa; albumen leviter ruminatum, fere ut in *Hedera*.—Arbor 30-pedalis, inermis. Folia digitata 5–3-(vel 1-) foliolata; stipulae intrapetiolares; foliola oblanceolata (solitaria interdum cordata), acuminata, integra supra scabride pilosa, in marginibus argute setoso-ciliata; petioluli rubiginoso-villosi. Umbelluli in parvis paniculis dispositi; pedicelli puberuli haud articulati.

HIMALAYA, alt. 10-12,000 feet, on the ridge dividing Nepaul from Sikkim; from Tonglo to Jongri.

The flowering specimens of this tree which Sir J. D. Hooker collected in 1850 were communicated to Professor Decaisne; but he did not take them up, because without fruit the place of the tree in the Order could not be determined. Examples in fruit have been lately received from J. S. Gamble, Esq., of the Indian Forest Department, and the genus established thereon has been named after him. The tree is plentiful on the ridge dividing Nepaul from Sikkim, in the region of *Rhododendron Falconeri*, but has not yet been communicated from any other locality.—C. B. CLARKE.

Fig. 1. Flower, petals removed. 2. Petal. 3. Fruit. 4. Seed. 5. Vertical section of same.

### PLATE 1339.

#### **AMPHIDOXA GNAPHALODES, D.C.**

COMPOSITE, Tribe GNAPHALIEÆ.

**A. gnaphalodes**, DC. Prodr. vi. 246; Harvey and Sonder, Flora Capensis, iii. 263.

HAB. Cape Colony, near Uitenhage, Ecklon; Port Elizabeth, Zeyher; Natal, J. M. Wood.

*Herba* facies Gnaphalii, decumbens lanata. *Folia* anguste linearis, spatulata appresse v. tenuiter lanata 1-nervia, sessilia subamplexicaulia, ad 1½ poll. longa. *Capitula* 1½-2 lin. diam. in cymis parvis gracile pedunculatis disposita; involuci squamis interioribus stramineis albidisve obtusiusculis v. subacutis flores superantibus; receptaculum nudum. *Flores* ♀ graciles ore minute 3-dentati; ♂ tubulosi superne parum ampliati 5-dentati; pappi setæ ad 5 caducæ apice tantum barbellatæ. *Antheræ* basi minute papillose. *Achænia* oblonga subteretia punctata.—D. OLIVER.

Fig. 1. Female flower. 2. Hermaphrodite floret. 3. Anthers. 4. Stigmas.

### PLATE 1340.

#### **PENTZIA PINNATIFIDA, Oliv.**

COMPOSITE, Tribe ANTHEMIDEÆ.

**P. pinnatifida**, Oliver, sp. n.; caulis simplicibus e basi lignoso ascendentibus longitudinaliter striatis laxe pilosis, foliis pinnatipartitis,

segmentis utrinque 1-3 anguste linearibus apice subulatim terminatis marginibus plus minus revolutis, corymbis terminalibus polycephalis, capitulis campanulatis pedunculatis, bracteis interioribus linear-i-oblongis margine scariosis apice denticulatis basi incrassatis, achaenii longitudinaliter striatis pappo cupuliformi dentato coronatis.

HAB. Inanda, Natal, Mr. J. M. Wood.

*Caulis*  $\frac{3}{4}$ - $1\frac{1}{2}$  ped., simplices, foliosi. *Folia* sursum gradatim minora alterna v. 2-3-approximata,  $\frac{3}{4}$ -1 poll. longa, segmentis angustis, primum pilosa. *Capitula*  $\frac{1}{2}$  poll. diametro, pedunculata, pedunculis inferioribus longioribus pilosulis tomentosis,  $\frac{1}{2}$ -1 poll. longis; bracteæ inferiores parvæ pinnatisectæ. *Involucrum* bracteis pauciseriatis, arcte appressis; receptaculum nudum. *Corolla* parce glandulosa, limbo campanulato 5-fido.—D. OLIVER.

Fig. 1. Capitulum. 2. Inner scale of involucre. 3. Floret, with enlarged upper portion of ovary. 4. Style and stigmas.

### PLATE 1341.

#### COURTOISIA CYPEROIDES, Nees.

CYPERACEÆ, Tribe SCIRPEÆ.

*C. cyperoides*, Nees in *Linnæa*, ix. 286; Boeckel. in *Linnæa*, xxxv. 434.

HAB. East India, in marshy wet places in the Peninsula and in Bengal.

*Caulis* cespitosi, 1-2-pedales, glabri, prope basin foliis 2-3 longis angustis flaccidis instructi. *Inflorescentia* terminalis, umbelliformis, radiis numerosis valde inaequalibus, exterioribus 2-3-pollicaribus umbellulam pleiocephalam ferentibus, intimis brevissimis 1-cephalis, intermediis pluribus. *Bracteæ* 3-4, exteriores sub umbella foliacies inaequales, longiores saepè semipedales, sub umbellulis breves, sub capitulis brevissimæ. *Spiculae* numerosæ, in capitulis globosis radia umbellæ v. umbellulæ terminantes sessiles, bracteolis parvis subtensæ, singulæ plano-compressæ, cum aliis glumarum ovatæ v. demum orbicularis,  $1\frac{1}{2}$  lin. diametro. *Glumæ* 2, naviculares, carina dorso latiusculæ alata. *Flos* unicus hermaphroditus addito rarius altero parvo imperfecto. *Setæ* hypogynæ 0. *Stamina* 3. *Stylus* cum ovario continuus, basi haud incrassatus, deciduus, ramis stigmatosis 3 filiformibus. *Nux* glumis inclusa quibuscum decidua, oblongo-fusiformis, acute 3-quætra, basi apiceque acuta, erostris.—G. BENTHAM.

Fig. 1. Spikelet. 2. Flower. 3. Cross-section of the spikelet.

## PLATE 1342.

## ERIOSPORA PILOSA, Benth.

## CYPERACEÆ, Tribe SCLERIEÆ.

*E. pilosa*, Benth. MS.—*Trilepis pilosa*, Boeckel. in *Linnaea*, xxxix. 10.

HAB. West tropical Africa. On high rocks where water stands during the rains at Nupe on the Niger, *Butler*, n. 1560.

*Rhizoma* longe repens, vaginis imbricatis foliorum vetustiorum dense obtectum. *Caules* erecti, 3-quetri, 1-2-pedales. *Folia* ad basim caulis conferta, caule breviora, angusta, acuminata, rigidula, secus caules paucæ, breviora, longe vaginata. *Panicula* terminalis, angusta, ramulis irregulariter fasciculatis, superioribus brevissimis, inferioribus in fasciculo sepe numerosis tenuibus valde inaequalibus, uno altero sepe 1-2-pollicari. *Spicularum capitula* (seu spicæ spiculiformes) ovata v. oblonga, ad apicem cuiusve ramuli paniculae solitaria v. sepius 2-4 conferta, sessilia, 2-3 lin. longa. *Spicula* in capitulo numerose, androgynæ, undique imbricatae, minimæ. *Glumæ* paucæ, carinatae, tenses, subdistichæ, infima vacua, secunda fiorem foemineum, 1-2 superiores florem masculum foventes, v. interdum flores omnes masculi. *Stamens* in flore masculo 1-3. *Setæ* hypogynæ normales desunt, sed ovarium floris foeminei basi pilis longis flexuosis dense cinctum. *Ovarium* apice in stylum attenuatum ramis stigmatosis 3.

The very natural and well-defined genus *Eriospora*, proposed by Hochstetter, was well described by Achille Richard in his 'Flora Abyssinica,' except that he considered the female flower and its subtending glume as a separate spikelet, whilst I always find it inserted at the base of the spikelet on the same axis as the two or three upper male flowers, thus clearly indicating its place among true *Scleriae*. Boeckeler associates the original Abyssinian species and the present one with the Brasilian *Fistulmannia* (under the name of *Trilepis*), which belongs to the *Cryptangieæ*, and describes in 'Flora' 1879, 569, a third species (*E. Schweinfurthiana*), distinct from, but with the habit and main characters of the above two, as a *Cypera*, a genus with which it appears to me not to have the slightest affinity. Schimper's n. 128, from Abyssinia, appears to be a fourth species, allied to, but distinct from, the original *E. abyssinica*.—G. BENTHAM.

Fig. 1. Spikelet. 2. Outer glume. 3. Inner glume with a male flower. 4. Female flower.

## PLATE 1343.

**CYATHOCHÄTE CLANDESTINA, Benth.**

CYPERACEÆ, Tribe RHYNCHOSPOREÆ.

*destina*, Benth. *Fl. Austral.* vii. 351.—*Carpba clandestina*, od. 231.

West Australia, King George's Sound, *Brown, Oldham*.

teretes, erecti, usque ad 7–8 ped. alti. *Folia* ad basin caulis e stiche imbricatis erecta, pedalia v. longiore, rigida, superne 1 vaginis 2–3-pollicaribus membrana lacera coronatis, paucam vagina longa lamina brevi. *Bractæ* florales secus caulis aperiorem longe laxeque vaginatae, lamina parva, superiores breviores brevius acuminatae. *Spiculae* intra quamque brac- ius 2, vix exsertæ v. una longius pedunculata, singulæ fere es, angustæ, vix compressæ, 2-floræ. *Glumæ* sæpius 4, ræ vacuæ, 2 interiores longiores latiores flores arcte invol- torum superior hermaphroditus, inferior masculus v. sterilis. *Ogynæ* 4, rigidæ, infra medium ciliato-subplumosæ. *Stamina* tis pollice glumas excedentibus, antheris linearibus pollicari- bus filiformis, longe exsbertus, ramis stigmatosis 2 filiformibus. *Iga*, styli basi indurata coronata, bene matura tamen adhuc J. BENTHAM.

tract opened out showing the spikelet. 2. Hermaphrodite flower.

## PLATE 1344.

**RHYNCHOSPORA RUPPIOIDES, Benth.**

CYPERACEÆ, Tribe RHYNCHOSPOREÆ.

(*rhynchospora*) *ruppioides*, Benth. sp. nov., aquatica, caule ctesque submersis filiformibus, inflorescentia irregulariter in composita, spiculis singulis pedicellatis, setis hypogynis mis stigmatosis 2.

Ceylon, in ponds near Colombo, *Thwaites*; Paraguay, marshes aza, *Balansa*, n. 2550.

submersi fasciculatim ramosi, foliis a basi linearifiliformi pallaceis. *Inflorescentia* composita, irregulariter fasciculato- liformis, radiis umbelliferis, umbellulis aliis ad fasciculam in longe capilliformium reductis aliis spiculas paucas longe as ferentibus. *Spiculae* angustæ, acuminatae, 4–6 lin. longæ,

1-floræ. *Glumæ* 3-4, rigidæ, ab extimo brevi ad intimum florentem gradatim auctæ. *Setæ hypogynæ* 6, subrequales, superne retrorsum barbatæ. *Stamina* 3. *Stylus* elongatus, basi incrassatus, ramis stigmatosis 2 papilloso. *Nux* late ovata, compressiuscula, styli basi persistente rostrata.

Although aquatic submerged species have been already described in most of the large widely spread Cyperaceous genera, none had been yet known in *Rhynchospora*, of which the present species has been received at once from Ceylon and from South America without my being enabled to detect the slightest differences between the specimens gathered in these two very distant stations.—G. BENTHAM.

Fig. 1. Glumes. 2. Young flower within the hypogynous setæ. 3. Flower further advanced, with the setæ developed and the anthers fallen away. 4. Fruit.

## PLATE 1345.

### ARTHROSTYLES APHYLLA, R. Br.

CYPERACEÆ, Tribe RHYNCHOSPOREÆ.

**A. aphylla**, R. Br. Prod. 229.—*Fimbristylis planiculmis*, Boeckel. in Linnæa, xxxviii. 391.

HAB. Tropical Australia, from Endeavour river, Banks and Solander, to Croker's island, A. Cunningham, and gathered by various collectors in intermediate stations.

*Caules* e rhizomate brevi plures, cespitosi, erecti, rigidi, 1-1½-pedales, complanati, aphylli, basi vagina pilosula brevi breviter acuminata stipati, vaginis caulinum vetustiorum diu persistentibus dense imbricatis. *Spiculæ* in capitulo terminali depresso-globoso 3-4 lin. diametro numerosæ, sessiles, 1½-2 lin. longæ. *Bractæ* exteriores involucrantes lanceolato-acuminatæ v. fere subulatæ appressæ, 1-2 capitulo sequi-longæ interiores minores gradatim in glumas abeuntes. *Glumæ* cuiususcum spiculæ 5-7, intima oblongo-lanceolata, acuta, membranacea, obscure 3-5-nervis, florem hermaphroditum fovens, cæteræ gradatim breviores latiores omnes vacue v. ex Boeckelero una sub gluma fertili florem masculum fovens. *Setæ hypogynæ* 0. *Stamina* 6, quorum 3 exserta præcoccia antheris caducissimis v. interdum deficientibus, 3 breviora inclusa. *Stylus* in ovario articulatus, crassiusculus, uti rami stigmatosi crassi recurvi undique dense pube nivea tomentosa obtectus. *Nux* ovoidea, obtusissima, erostris, albida, lævis v. sub lente minute reticulata.—G. BENTHAM.

Fig. 1. Spikelet. 2. Flowering glume. 3. Flower. 4. Nut with the style naturally detached at maturity.

## PLATE 1346.

**ACTINOSCHÆNUSS FILIFORMIS, Benth.**

CYPERACEÆ, Tribe RHYNCHOSPOREÆ.

*Filiformis*, Benth. MS. *Arthrostylis filiformis*, Thwaites, Enum. Pl. 352.

as. Ceylon, Thwaites, Beckett.

iles e rhizomate brevi, plures, cæspitosi, erecti, rigide filiformis, stri, 1-3-pedales, aphylli, basi vagina glabra breviter acuminata i. *Spicule* tenues, in capitulo terminali globoso numerosæ, es, undique radiantes, exteriores reflexæ 2-2½ lin. longæ. *Brac-* exteriore paucæ, linearis-subulatæ, sub spiculis fere occultæ. *& cuiusve spiculæ* 4-6, intima v. rarius 2 intimæ florem herma- litum foventes, breviter subulato-acuminatæ, acumine sæpe recurvo, iores vacuæ gradatim breviores. *Setæ* hypogynæ 0. *Stamina* 3, entis sub anthesi brevibus. *Style* in ovario articulatus e basi illoso-incrassata filiformis, glaber, ramis stigmatosis 3 rarius 2 er filiformibus glabrisque. *Nux* ovoideo-globosa, obtuse sub-3- a, albida, obscure papillosa, interdum styli basi diu coronata, ra tamen nuda.

the MS. prepared for the forthcoming part of our 'Genera Plantæ' I have proposed the genus *Actinoschænus* for three plants hto described as species of *Arthrostyles*, and from which Boeckeler taken his character of that genus. They differ however from Brown's (described by Boeckeler as a *Fimbriostylis*) in the shape of the ilium, in the few narrow outer bracts not forming a conspicuous acre, in the stamens 3 only instead of 6, and in the slender gla- style. The three species of *Actinoschænus* closely resemble each but come from such different countries that they can scarcely be d as varieties without further evidence. They are: 1. *A. Thouarsii*, (Arthrostyles Thouarsii, Kunth, Enum. Pl. ii. 284), from Madar; 2. *A. filiformis*, Benth., as above, from Ceylon; and 3. *A. chi-* (Arthrostyles chinensis, Benth. Fl. Hongk. 398), from Hong-  
g.—G. BENTHAM.

1. Spikelet. 2. Flower. 3. Pistil. 4. Nut with the base of the style not len off.

## PLATE 1347.

**PTEROSCLERIA LONGIFOLIA, Griseb.**

CYPERACEÆ, Tribe CRYPTANGIEÆ.

*longifolia*, Griseb. Fl. Brit. W. Ind. 579.

as. Trinidad, Herb. Hook. North Brasil, in marshy ground, Igarapé , near Santarem, Spruce, n. 648.

*Caules* erecti, simplices, 3-quetri, 1-2-pedales, uti tota planta glabri. *Folia* inferiora caulem sœpe superantia, superiora pauca dissipata, 3-6-pollicaria, breviter vaginata, omnia angusta, erecta, acuta, rigidula, subtes prominenter venosa. *Spicularum capitulum* terminale, semipollicem diametro, additis haud raro 1-3 inferioribus paullo minoribus ad axiles foliorum subsessilibus. *Spiculae* parve, in quoque capitulo sœpius numerose, omnes sessiles sed irregulariter fasciculatae, fœminæ in quoque fasciculo terminalis, masculis pluribus lateralibus, sed interdum fœminæ adest infra masculas (an ad fasciculum distinctum pertinens?). *Bractæ foliaceaæ* sub capitulo terminali 2 v. 3, patentes, inæquales longiore 1-3-pollicari, interiores concavæ, carina in alam denticulatam sœpius dilatata, recurvo-acuminata, acumine nonnullarum spiculas parum superante, sœpius tamen brevissimo. *Spiculae* ♂ 2-3-floræ, glumis acutis carinatis exalatis, 1 rarius 2 exterioribus vacuis. *Stamina* 1-2. *Spiculae* ♀ 1-floræ, glumis sœpius 3. *Setæ hypogynæ* 0. *Stylus* filiformis, ramis stigmatosis 3. *Nux* 3-costata, erostris, disco hypogyno parum prominulo.

The genus *Pteroscleria* now comprises three species, differing but little from each other except in stature and length of leaves. The original *P. guianensis*, Nees, only known from Parker's specimens from British Guiana, has the leaves from  $\frac{1}{2}$ - $\frac{3}{4}$  of a foot (not of an inch as stated by Nees, evidently through a clerical error). The third species, *P. capitata*, Benth., is the *Scleria capitata*, Willd., described by Boeckeler in *Linnæa*, xxxviii. 435 as a *Diplacrum*, in which the leaves are only 2 or 3 inches long and often obtuse, and the heads of spikelets small. Besides the original specimen from Cumana which I only know from descriptions, I should refer to it Spruce's n. 3763 from the inundated sandy banks of the Guiana river.—G. BENTHAM.

Fig. 1. Female spikelet. 2. Male spikelet with the subtending bract. 3. Bract. 4. Pistil.

## PLATE 1348.

### TRIANOPTILES CAPENSIS, Fenzl.

CYPERACEÆ, Tribe RHYNCHOSPOREA.

*T. capensis*, Fenzl in Endl. Gen. Pl. 113.—*Ecklonia capensis*, Steud. in Flora 1829, 138; Boeckel. in Linnæa, xxxviii. 229.

HAB. South Africa, Table Mountain, near Cape Town, *Ecklon*, Harvey.

*Caules* cœspitosi, 3-4-pollicares. *Folia* ad basin caulis graminea, caulem sequantia v. breviora. *Spiculae* plures, sessiles, fasciculatae, in

spicam angustum breviter oblongam terminalem densam v. laxam rarius ultra semipollarem conferit, sepius 2-floræ. Bractæ inferiores 1-3, foliacæ, spicam sepius superantes, interiores parvae. Glumæ 4-5, imbricatae, quarum 1-2 inferiores breviores vacua, et interdum summa parva vacua. Flos uterque hermaphroditus, inferior tamen sepius sterilis. Squamae hypogynæ 3, angustæ, complanatae, basi plumosociliatae, superne glabre, 3-fidae, lobis linearibus erectis medio laterilibus longiore. Stamina 3. Stylus basi incrassatus, pubescens, peristerna, superne glaber, filiformis, deciduus, ramis stigmatosis 3. Nux obovoides, triquetra, styli basi persistentis rostrata.

Steudel's original name of *Ecklonia* was changed by Fenzl into *Trianoptiles*, as having been preoccupied in Algae.—G. BENTHAM.

Fig. 1. Spikelet. 2. Flower. 3. Hypogynous scale. 4. Nut with the style not yet fallen off.

### PLATE 1349.

#### A. VERNONIA STENOCEPHALA, Oliv.

#### B. VERNONIA NYASSÆ, Oliv.

#### COMPOSITÆ, Tribe VERNONIEÆ.

V. stenocephala, Oliver, sp. nov. Frutex ramulis gracilibus striatis puberulo-tomentellis, foliis anguste linearibus subsessilibus adscindentibus minute canescenti-hirtellis deinde supra glabratris marginibus arcte revolutis, capitulis 5-7-floris ovalibus cymosis breviter pedunculatis v. subsessilibus in paniculis oblongis terminalibus dispositis, involucro piloso-tomentoso squamis inæqualibus pluriseriatis appressis interioribus lineari-lanceolatis obtusiusculis mucronulatis apice purpurascientibus, corolla superne leviter dilatata pappi setis exterioribus brevibus complanatis interioribus gracilibus breviter plumosis, ovario sericeo-hirtello.

HAB. Lower plateau, north of Lake Nyassa, Mr. Thomson.

Rami ut videtur stricti parce ramosi. Folia 1-1½ poll. longa, lineam lata, costa subtus minute pubescente. Capitula ½-¾ poll. longa; squamæ involuci exteriore multo breviores ovato v. ovali-oblongæ obtusiusculæ plus minus mucronulatae.

Ripe achenes I have not seen.

Fig. 1. Capitulum. 2. Corolla. 3. Ovary and pappus.

**V. Nyassæ, Oliver, sp. nov.**, acaulis, foliis radicalibus oblanceolatis acutiusculis v. obtusis pilosulis supra scabride hirsutis petiolo piloso, scapo monocephalo piloso foliis 2-3-plo longiore, capitulo multifloro, involucri squamis 2-3-seriatim lanceolatis acuminatis pilosis, exterioribus brevioribus subulatis laxe appressis, corollæ segmentis linearibus patentibus, ovario pilis subappressis hirsuto, pappi setis barbatis exterioribus multo brevioribus.

HAB. Higher plateau, north of Lake Nyassa, Mr. Thomson.

*Folia*  $\frac{3}{4}$ -2 poll. longa, 3-5 lin. lata. *Scapus* 2-3 poll. longus. *Capitulum* poll. diametro, floribus involucrum superantibus—D. OLIVER.

Fig. 1. Corolla, detached. 2. Ovary and pappus.

### PLATE 1350.

#### ACACIA HUNTERI, Oliv.

LEGUMINOSE, Suborder MIMOSÆ.

**A. Hunteri, Oliver, sp. nov.**—Glabrata, pallida; aculeis ternis rectis v. curvalis, foliis parvis, pinnis 2-3-jugis; foliolis latiusculæ oblongis obtusis v. interdum obscure mucronulatis basi oblique subcordatis glabris, rhachide puberula, floribus spicatis sessilibus, spicis breviter pedunculatis, calyce campanulato puberulo, petalis oblanceolatis mucronulatis, legumine oblongo stipitato valvis obtusis mucronatis transverse venulosis puberulis.

HAB. Neighbourhood of Aden, F. Hunter.

*Folia*  $\frac{1}{2}$ - $\frac{3}{4}$  poll. longa, rhachide puberula; foliola ad 1 lin. longa. *Inflorescentia* cum pedunculo  $\frac{1}{2}$ - $\frac{3}{4}$  poll. longa. *Legumen*  $\frac{3}{4}$ -1 $\frac{1}{2}$  poll. longa,  $\frac{1}{2}$  poll. lata, 1-3-sperma.—D. OLIVER.

Fig. 1. Leaflet. 2. Bud. 3. Petal. 4. Expanded flower and separate anther. 5. Legume laid open, with a single funiculate seed remaining: excepting the last, enlarged.

# ICONES PLANTARUM.

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## PLATE 1351.

### TECOMA NYASSÆ, Oliv.

#### BIGNONIACEÆ.

**T. Nyassæ**, *Oliver, sp. nov.* Aff. *T. capensi*, differt: foliolis sepius obtusioribus, calyce 2-3-plo longiore 5-fido, lobis ovato-lanceolatis acutatis acuminatisve.

**HAB.** Lower plateau, North of Lake Nyassa, E. Tropical Africa,  
*Mr. Thomson.*

*Ramuli puberuli glabrescentes. Foliola lateralia 2-3-juga breviter petiolulata late elliptica v. ovato-elliptica obtusa apicem versus crenato-serrata subtus ad venarum axillas sepe villosula, terminalia basi rotundata 1½-1¾ poll. longa. Inflorescentia racemosa longe pedunculata folia superantia; pedunculus semi-pedalis minute puberulus teretiusculus; bractæ linearisubulatæ caducæ; pedicelli ½-poll. longi medio bibracteolati, bracteolis subulatis. Calyx tubuloso-infundibuliformis puberulus ½-¾ poll. longus 5-lobatus, lobis tubo brevioribus oblongo- v. ovato-lanceolatis apice plus minus acuminatis curvulis. Corolla calyce 3-plo longiora longe tubuloso-infundibuliformis incurva, limbo bilabiato lobis late ovatis ovato-rotundatisve obtusis. Stamina exserta.*—D. OLIVER.

Fig. 1. Flower. 2. Anther, front and back.

## PLATE 1352.

**BEGONIELLA KALBREYERI, Oliv.**

BEGONIACEÆ.

**B. Kalbreyeri, Oliv., sp. nov.** Papilloso-setigera, perianthio duplo  
exteriore campanulato undulato-4-lobulato interiore genitalia sequante  
campanulato hyalino-membranaceo, staminibus 4 erectis filamentis  
brevissimis a basi subliberis.

HAB. Antioquia, Mr. Kalbreyer.

*Caulis* 6–15 poll. erecti papilloso-hirsuti. *Folia* oblique ovato-  
elliptica acuminata plus minus grosse serrata utrinque papilloso-  
setulosa, breviter petiolata, 2–3 poll. longa; stipulis linear-lanceolatis  
petiolo sublongioribus. *Flores* axillares pedunculati, pedunculis folio  
brevioribus sepius 1–2–4-floris, bracteis ovato-oblongis v. lanceolatis.  
*Perianthium* exterius ore late 4-lobulatum, extus setulosum  $\frac{1}{2}$  poll.  
longum; p. interius breve campanulatum membranaceum. *Anthere*  
lineares apicem versus paullo latiores.

This plant at first sight, in habit, form and size of leaves, indumentum and form of the flowers, closely resembles my *B. Whitei*, described and figured in 'Trans. Linnean Society,' v. xxviii. p. 513, pl. 41. It differs in the few bracts of the peduncles, which are numerous and distichous in *B. Whitei*, and, much more notably, in the presence of a short inner perianth (corolla), about or nearly equaling the stamens in the ♂ and the branches of the stigma in the ♀ flower, also in the form and insertion of the anthers, which in the new plant are very slightly dilated above (not obovate-cuneate as in *B. Whitei*) and erect from their insertion (in *B. Whitei* distinctly monadelphous, the anthers diverging in two pairs). These differences compel a little expansion of the generic character.—D. OLIVER.

Fig. 1. Stamine flower. 2. Same, calyx laid open. 3. Stamens, the corolla laid open. 4. Anther. 5. Pistillate flower. 6. Transverse section of ovary.

## PLATE 1353.

**PHYLLOBOTRYUM SPATHULATUM, Muell. Arg.**

BIXACEÆ.

**P. spathulatum, Muell. Arg.; DC. Prod. xv. pt. 2, p. 1232.**

HAB. Sierra del Crystal, G. Mann. Munda, Gaboon, H. Soya (descr. ex. spp. Gaboonensis).

*Arbuscula* 10-pedalis. *Folia* elongata oblanceolata acuminata basi angustata v. obtusiuscula.  $1\frac{1}{2}$ – $1\frac{3}{4}$  ped. longa. *Flores* polygami masculi

broditi, pedicellati, in costa primaria fasciculati: fl. ♀, oblongo-ovatis calyce 2-3 plo. longioribus; ovario libero uno 1-loculare, placentis tribus multiovulatis; stylis 3 liberi; fl. ♂ trimeri, staminibus circ. 15-18, filamentis gracilibus, itoideo-ovatis.

specimen figured of this singular plant we are indebted to y of M. Soyaux and Dr. Ascherson, adding to our previous knowledge of it as published by Mueller, and confirming's view as to its affinity ('Bull. Soc. Linn., Paris,' 1881, p. annot, however, regard M. Soyaux's plant as distinct from I see M. Baillon does, proposing to call it *P. Soyauxianum* 3). A detached fruit sent me a few weeks ago by Dr. already dehisced loculicidally in three valves from the apex may be  $\frac{1}{2}$  to  $\frac{3}{4}$  in. in diameter, the pericarp minutely berced, and containing some four albuminous seeds with embryo about  $\frac{1}{8}$ th in. in length, the radicle as long as or the ovate cotyledons.—D. OLIVER.

male flower. 2. Hermaphrodite flower. 3. Stamen. 4. Transverse ry.

## PLATE 1354.

## INDIGOFERA TRACHYPHYLLA, Benth.

## LEGUMINOSÆ, Suborder PAPILIONACEÆ.

*indigofera*, § *Simplicifoliae* *trachypylla*, Benth. MS. ramosa, hirsuta, foliis linear-lanceolatis oblongisve apice lis mucronatis brevissime petiolatis margine saepe anguste strinque setulis subappressis scabridis, stipulis acicularibus ongis, pedunculis axillaribus folio subæquilongis erectis, spicatis pedicellatis, pedicellis bractea subulata brevioribus, goso profunde 5-fido lobis acuminatis, corolla exserta, ovario setoso.

Shiré Highlands, Zambesia, J. Buchanan!

x  $\frac{1}{2}$ -2-pedalis ramosus, ramis adscendentibus setis inæquinitatis. *Folia*  $1\frac{1}{2}$ - $2\frac{1}{2}$  poll. longa  $\frac{1}{3}$ - $\frac{1}{2}$  poll. lata. *Inflorescentia* subglobosa capitata. *Flores* 2-lin. longi; vexillum obovatum extus strigulosum; carina utrinque calcarata vexilla; alæ ob lanceolato-oblongæ carina breviores. *Ovarium* sum, stylo superne glabro.—D. OLIVER.

ower. 2. Vexillum, within. 3. Ala. 4. Carina, lateral view. 5. Calyx . 6. Stamens. 7. Anther. 8. Young fruit. 9. Same, open.

## PLATE 1355.

**DIPLORHYNCHUS MOSSAMBICENSESIS, Benth.**

APOCYNACEÆ.

**D. Mossambicensis, Benth. sp. nov.** Arbor, ramulis ultimis teretibus puberulis, foliis ellipticis breviter obtuse acuminatis basi saepius rotundatis longiuscule petiolatis glabratris, paniculis tomentellis terminalibus subsessilibus foliis brevioribus, floribus breviter pedicellatis, folliculis lignosis rugosis 4-spermis.

HAB. Shiré Highlands, Zambesia, *J. Buchanan.*

*Folia* late elliptica submembranacea  $2\frac{1}{4}$ - $3\frac{1}{2}$  poll. longa,  $1\frac{1}{4}$ -2 poll. lata; petiolus  $\frac{1}{2}$ - $\frac{3}{4}$  poll. longus. *Flores* (alabastro)  $\frac{1}{2}$  poll. longi; pedicelli tomentelli calyce superne extus glabratim longiores. *Calyx* 5-fidus, lobis ovatis ciliolatis. *Corolla* fere glabra, lobis tubo sequilongia. *Folliculi* 2-poll. longi  $\frac{3}{4}$ -1 poll. lati; semina alata funiculata 2 prope basin 2 sub apice peltatim affixa, ali inclusa  $1\frac{1}{2}$  poll. longa.

Called *Mtomoni* by the natives; a large tree abounding, Mr. Buchanan says, in 'a white juice possessing a good deal of the quality of India Rubber.' Very nearly allied to *Diplorhynchus psilopus*, Welwitsch MSS. (No. 5982 of his *Iter Angolense*), in which, however, the leaves are much more gradually, or more cuneately, narrowed into their long petioles.—D. OLIVER.

Fig. 1. Bud. 2. Flower. 3. Corolla, laid open. 4. Anthers, back, front and side views. 5. Pistil. 6. Ovary, transverse section. 7. Follicle. 8. Same, open, one valve removed. 9. Seed.

## PLATE 1356.

**RANDIA BUCHANANII, Oliv.**

RUBIACEÆ, Tribe GARDENIEÆ.

**R. Buchananii, Oliver, sp. nov.** Glabra, ramulis teretibus, foliis ellipticis v. obovato-ellipticis late et obtusiuscule acuminatis basi saepè cuneatis, petiolatis, floribus erectis solitariis terminalibus breve pedunculatis, calyce truncato breviter 5-dentato, corolla tubo appresse piloso infundibulari-campanulato basi in tubo cylindrico calyce longiore angustato, limbo 5-lobo, lobis patentibus late ovatis, fructu globoso pericarpio tenui, endocarpio osseo.

HAB. Shiré Highlands, Zambesia, *J. Buchanan.*

*Folia* membranacea glabra,  $3\frac{1}{2}$ -4 poll. longa,  $1\frac{1}{2}$ -2 poll. lata; petiolus

$\frac{1}{2}$  poll. longus; stipulae breves late deltoideæ persistentes. *Flores* 2½–3 poll. longi; pedunculi  $\frac{1}{2}$  poll. longi, bractæ breves ovato-deltoideæ ciliolatæ. *Calyx*  $\frac{1}{2}$  poll. longus, basi angustatus cylindricus corollæ brevior. *Corolla* limbo 2½ poll. lato. *Fructus* subglobosus sublaevis bilocularis polyspermus 1½ poll. diametro.—D. OLIVER.

Fig. 1. Anther, back and front. 2. Fruit. 3. Same, open.

### PLATE 1357.

#### BURMANNIA KALBREYERI, Oliv.

##### BURMANNIACEÆ.

**B. Kalbreyeri**, *Oliver, sp. nov.* Perennis, caulis adscendentibus foliosis basi foliis marcescentibus vestitis, foliis gramineis linearibus acuminatis nervosis, cymis multifloris a basi umbellatim 3–5-partitis, floribus erectis longe pedicellatis, bracteis majusculis herbaceis, ovario triquetro vix v. haud alato, seminibus inappendiculatis.

HAB. S. José, Prov. Antioquia, Mr. Kalbreyer.

*Herba* subpedalis, caulis basi plus minus decumbentibus. *Folia* inferiore 4–7 poll. longa  $\frac{1}{4}$ – $\frac{1}{2}$  poll. lata; superna gradatim minora. *Bractea* lanceolatae acuminatae  $\frac{1}{2}$ – $\frac{3}{4}$  poll. longæ. *Flores* semipollicares: perianthii lobis exterioribus violaceis ovatis acutis interioribus breviribus linear-lanceolatis albis. *Antheræ* diametro transversali quam verticali subdupo maiores connectivo crassiusculo. *Ovarium* basi angustatum triquetrum. *Semina*  $\frac{1}{5}$  poll. longa oblonga v. anguste fusiformia inappendiculata.—D. OLIVER.

In *facies* resembles somewhat *B. longifolia*, Beccari, (Malesia, i. t. 13, fig. 1).

Fig. 1. Flower, perianth closed. 2. Part of perianth laid open. 3. Stigma. 4. Tranverse section of ovary.

### PLATE 1358.

#### PHYSOTRICHIA BUCHANANI, Benth.

##### UMBELLIFERA, § SESELINEÆ.

**P. Buchanani**, *Benth. sp. nov.* 5–6 pedalis, glabra; caule erecto tereti striato glaucescente, foliis saepius ad apicem ramorum confertis, petiolo brevi vaginato, bipinnatis, pinnis 1–2-jugis, foliolis saepius 1–3-

*jugis cum impari, lateralibus oblique et late ellipticis mucronulatis, terminalibus obovato-rotundatis s<sup>e</sup>pe minute 3-dentatis, umbellis pluriradiatis longe pedunculatis, bracteis reflexis anguste ovalibus, fructibus oblongis subteretibus hirtellis, jugis primariis prominulis crassiusculis.*

HAB. Top of Mount Zomba, Shiré Highlands, *J. Buchanan.*

*Folia radicalia non vidi, caulescentes 5–7 poll. longa et lata; foliolis 1–2 poll. longis  $\frac{3}{4}$ – $1\frac{1}{2}$  poll. latis, sessilibus v. lateralibus basi oblique angustatis subpetiolulatis. Umbellæ compositæ tomentellæ 4–8 poll. diam.; involuci bracteæ  $\frac{3}{4}$ – $1\frac{1}{2}$  poll. longæ, marginis submembranaceis pallidis, involucellarum bracteæ minores; pedicelli hirtelli fructu longiores. Petala obovata apice inflexa. Fructus ellipsoideo-oblongus, 2 lin. longus.—D. OLIVER.*

Fig. 1. Flower. 2. Stamens. 3. Pistil. 4. Fruit. 5. Mericarp, transverse section.

### PLATE 1359.

#### BRACHYSTEGIA LONGIFOLIA, *Benth.*

LEGUMINOSÆ, CÆSALPINIÆ, Tribe AMHERSTIÆ.

*B. longifolia*, *Benth.* sp. nov.; foliis glabris, foliolis 8–12-jugis oblongo-lanceolatis obtusis sessilibus basi oblique subcordatis, racemis latinscule paniculatis rufo-puberulis, floribus pedicellatis, ovario stipitato.

HAB. Tropical Africa, Shiré Highlands, Zambesia, *J. Buchanan.* N'Jombo of the natives.

*Arbor* ligno molli, ramis adultis foliisque glabris, novellis paniculaque pube minuta rufidulis. *Folia* inferiora pedalia; foliola 2–3-pollicaria, 6–9 lin. lata, tenuiter coriacea, nitidula, venulosa, subtus pallida, costa parum excentrica, prope basin tamen distincte inaequilatera, venis 1–2 in latere latiore medium folium interdum attingentibus; ramorum floralium folia foliolaque minoria. *Panicula* in ramulis hornotinis brevibus 1–3-foliatis terminales v. in ramo annotino laterales, aphyllæ, ovato-pyramidalæ, laxiusculæ, 2–4-pollicares, floribundæ, ramulis patentibus simplicibus v. 2-fidis. *Bracteæ* parvæ, orbiculatæ, jam ante anthesin caducæ. *Pedicelli* vix semilinea longiores. *Bracteolæ* valvatae, 3– $3\frac{1}{2}$  lin. longæ. *Sepala* 5, lineari-oblonga, membranacea, ciliata, linea paullo longiora. *Petala* s<sup>e</sup>pe ad sunt 3–4, linearia, tenuissima, sepalis longiora. *Stamina* bracteolis paullo longiora. *Ovarium* distincte stipitatum, oblique obovatum, pilosum, ovulis 6–8. *Legumen* sublignosum, compressum, valde obliquum, 4–5 poll. longum,

lio 2 poll. latum, apice basique angustius, sutura seminifera 2-ata. Semina perfecta sepius 2, suborbiculata, plana.

gave a revised generic character and described three species of tropical African genus in the Linnean 'Transactions,' xxv. 311, 2, to these Mr. Buchanan's collections from the Shiré Highlands he added three more, the above *P. longifolia* and the two following, distinguished from the previously published ones by the looser branching panicles.

*P. floribunda*, Benth., foliis glabris, foliolis 3-jugis late oblongis usque obtusis sessilibus basi inaequilateris, racemis latiusculae paniculæ rufo-pubescentibus, floribus pedicellatis, ovario stipitato rufissimo.—Arbor procera, ligno duro. Foliorum rhachis tenuis, ipedalis; foliola 3–4 poll. longa, 1–2 poll. lata, papyracea, venulosa, a parum v. distincte excentrica, basi latere latiore sepe 2–3 nervia. iculae in ramis annotinis fasciculatae, 2–3-pollicares, a basi dense bundæ, rufo-pubescentes. Bracteolarum paria in alabastro dea, 2 lin. longa. Sepala *B. longifoliae*. Petala deesse videntur. umen 4–5 poll. longum, a basi ad apicem 1½ poll. latum. Semina orbiculata, plana.—The natives distinguish two varieties, one with larger leaflets than the other, but the other characters are quite the same in both.

*P. globiflora*, Benth., foliis pubescentibus, foliolis 5–7-jugis late jugis obtusis basi valde inaequalibus, racemis late laxeque paniculæ, pedicellis brevissimis, ovario sessili villoso.—Arbor procera. orum inferiorum rhachis sepe pedalis, foliolis 3–4 poll. longis 1½ latis, ramorum floralium foliola multo minora et angustiora. cula terminalis, foliata, ampla, v. in ramis annotinis paniculæ breves et valde divaricatis recurvis. Bracteolarum paria in alabastro sa, fere 2 lin. diametro. Sepala interdum parum breviora, et a linearia quam in cæteris speciebus evidenteriora. Legumen 2-are, ¾ poll. latum.—G. BENTHAM.

1. Flower showing the two bracteoles, three of the sepals, two of the petals, six stamens and the pistil. 2. A sepal. 3. A petal. 4. Pistil. 5. Ovary, median section. 6. Pod. 7. Seed.

## PLATE 1361.

### MICRAIRA SUBULIFOLIA, F. Muell.

GRAMINEÆ, Tribe ISACHNEÆ.

*subulifolia*, F. Muell., *Fragm. Phyt. Austral.*, v. 208.

1. Queensland, hilly districts, on rocks, sometimes completely covering them in dense masses, *Dallacky* and others.

*Gramen humile*, perenne, prostratum v. repens, interdum dense cæspitosum, basi ramorum et vaginis foliorum emarcidorum plus minus obtectum. *Folia* in ramulis dense fasciculata, linearis-subulata, raris semipollucem excedentia, vagina ad os leviter ciliata. *Panicula* terminalis, gracilis, pedunculata, laxè pyramidata, pollice brevior, ramulis pedicellisque capillaribus. *Spicula* minimæ, æqualiter 2-flora, rhachilla supra glumas inferiores articulata, brevissima, ultra flores non products. *Glumæ* 2 inferiores vacue, vix semilinea longiores, sub articulatione persistentes v. demum sigillatim deciduae, membranaceæ, acutæ, tenuissime venosæ, muticæ, subæquales; florentes 2 vacuis breviores, membranaceæ, latæ, truncate, nervis ad 7, fructiferæ cum palea inclusa subhemisphæricæ, non induratae. *Palea* plurinervia, nervis 2 cæteris evidentioribus. *Stamina* 3? *Styli* breves, distincti, stigmatibus plumosis. *Caryopsis* gluma paleaque inclusa, libera.—G. BENTHAM.

Fig. 1. Leaf. 2. Spikelet. 3. Flowering glume and palea. 4. Flowering glume, opened out. 5. Palea, opened out. 6. Pistil. 7. Caryopsis.

## PLATE 1362.

### ACIACHNE PULVINATA, Benth. ♀.

GRAMINEÆ, Tribe AGROSTIDEÆ (*Stipeæ*).

*Aciachne*, Benth. gen. nov., Char. gen. *Spiculae* unisexuales, ♂ ignotæ. *Spicula* ♀ 1-flora, in pedunculo terminali unica, erecta, rhachilla brevissima supra glumas inferiores articulata, ultra florem non products. *Glumæ* 3, 2 inferiores vacue, latæ, tenuiter membranaceæ subhyalinæ et rigidulæ, obtusæ, muticæ, parum inæquales, sub articulatione persistentes; terminalis florens multo longior, rigida, basi lata circa florem convoluta, superne in acumen longum teret rigidum producta; palea brevior, inclusa, hyalina, latiuscula, circa florem convoluta, tenuiter 2-nervis. *Lodiculæ* parvæ. *Staminodia* 0. *Styli* distincti, stigmatibus plumosis. *Caryopsis* (immatura) oblonga, gluma rigida subindurata inclusa, libera.

**A. pulvinata**, Benth. MS., single species.

HAB. Andes of South America, Parano Viejo, New Granada, a most annoying weed to walk through, the glumes sticking to the feet. Purdie; New Granada, Goudot; El Ecuador, abundant near Salinas on marshy ground, forming a dense mass, Jameson, n. 157; Aigapata, in Peru, where it forms large masses, Lechler, n. 3134, also in Hohenacker's distribution of Lechler's plants under the number 1813, as

the summit of the Cordilleras near San Antonio, but as the very name of *Distychia muscoides*, Nees, is given, there may be some in the label; La Paz, Bolivia, at an elevation of 12,226 feet, n.d.; Alpine region, province of Larecaja, Bolivia, at an elevation 10 to 4200 metres, *Mandon*, n. 1287.

men perenne, nanum, multicaule, pulvina latissima densissime formans. *Caules* cum foliis 1-3-pollicares, foliorum vaginis atis diu obtecti, basi demum fere denudati. *Folia* densissime ta, nunc subdisticha nunc quaquaversa, laminis patentibus irtvis convoluto-subulatis rigidis saepe pungentibus raro semi-m excedentibus; ligula prominens ovata. *Pedunculus* terminalis, folia parum excedens v. iis brevior. *Gluma* vacuae diu peres,  $\frac{1}{4}$ -1 lin. longae; florens cum acumine dimidio v. subdupo.

withstanding the number of specimens from most of the above es, I have been unable to detect any but female spikelets, which e of them are numerous, often past flower, and showing only rsistant outer glumes. The males are probably on distinct and most likely with a different inflorescence, rendering it t to identify them. If that be the case, it is possible that the f this, or an allied species, may be represented by Lechler's ens gathered at Gachapata in Peru, a month earlier than the s above referred to, and distributed with the number 599. In he leaves are longer, all erect, and very rigid, 1 to 3 in. long. Spikelets are several in a loose, slightly branched, rigid, erect of 1 to 2 inches, the glumes precisely like those of the females, closing three perfect stamens, and the ovary reduced to an udiment with two small points.—G. BENTHAM.

. Seed. 2. Leaf. 3. Spikelet. 4, 5. Lower empty glumes. 6. Ovary and . Palea, lodicules, and ovary, the styles having fallen off. 8. Flowering almost closed over the palea. 9. Flowering branch from the specimens ed by the lower general figure; the upper general figure represents s from the same localities with much finer leaves with narrower sheaths.

### PLATE 1363 A.

#### **ANTHOCHLOA LEPIDA, Nees.**

GRAMINEÆ, Tribe FESTUCEÆ (*Meliceæ*).

*Lepida*, Nees in *Pl. Meyen*. 164 (*lapsu calami Antochloa*).

Andes of Peru and Bolivia at an elevation of 14,500 to feet, *Meyen*, *Mandon*, n. 1372.

en nanum, dense cæspitosum, caulis foliorum vaginis ob-

tectis,  $\frac{1}{2}$ —2 poll. longis. *Folia anguste linearia*, plana,  $\frac{1}{2}$ —1 poll. longa. *Paniculae* laxè capituliformes (sæpius densiores quam in iconæ delineatæ), inter folia terminales, sessiles v. breviter pedunculatæ, folia superiore brevia vix superantes. *Spiculae* paucifloræ, secus rhachin singulæ v. inferiores 2—3-næ brevissime pedicellatæ, rhachilla inter flores articulata, floribus hermaphroditis. *Glumæ* latæ, hyalino-scariosæ, albae, muticæ, 2 inferiores vacuæ, inæquales; florentes majores, a basi brevissime cucullata latissime expansæ, fere flabellatae, petaloïdeæ  $1\frac{1}{2}$  lin. diametro, breviter tenuiterque 5-nerves; 1—2 superiores minores, vacuæ, sub-3-nerves. *Palea angusta*, hyalina, 2—3-fida v. lobo medio diviso fere 4-fida. *Stamina* 3. *Styli* breves, distincti, stigmatibus plumosis. *Caryopsis* immatura ovoidea, intra basin glumæ a palea libera.

This curious little grass with its numerous little heads of white spikelets has almost the aspect of some of the dwarf *Helichrysa*. Our specimens are Bolivian from Mandon, but they agree well with Nees's description of Meyen's Peruvian plant. Remy has published a second Bolivian species gathered by D'Orbigny, but I cannot make out from his description any really distinctive character.—G. BENTHAM.

Fig. 1. Spikelet enlarged and represented looser than it is at the time of flowering. 2. Outer empty glume. 3. Flowering glume. 4. Palea. 5. Stamens and pistil.

### PLATE 1363 B.

#### UROCHLÆNA PUSILLA, Nees.

GRAMINEÆ, Tribe FESTUCEÆ (*Seslerieæ*).

**U. pusilla**, Nees, *Fl. Afr. Austr. Gram.*, 438.

HAB. South Africa, dry sandy hills near Ebenezer, Clanwilliam district, Drege. Not seen in any other collection.

*Gramen pumilum, annuum, caulis tenuibus rigidulis 3—4-pollinariibus. Folia angusta, pauca, summum sub inflorescentia spiculas superans, a cæteris distans. Spiculae parvæ, paucifloræ, in panicula capituliformi secunda densissime fasciculatæ, floribus hermaphroditis v. summo masculo; capitulum intra vaginam folii summi floralis sub-sessile, basi et intra capitulum ad basin ramulorum brevissimorum spiculis nonnullis sterilibus v. glumis vacuis quasi involucratum, fructiferum cum folio florali a geniculo superiore caulis articulatim deciduum. Glumæ ovatae, concavæ, membranaceæ, 5—7-nerves, acuminate, acumine in aristam patentem producto; 2 infimæ vacuæ, florentibus paullo minores; superiores iterum paullo minores. Palea gluma paullo brevior, hyalina, 2-carinata. Stamina. . . Styli distincti, stigma-*

tibus laxe plumosis. Caryopsis breviter oblonga, glabra, a palea libera.

The manner in which the fruiting inflorescence with its subtending leaf breaks off from the stem or peduncle has not, as far as I am aware, been observed in any other grass. The genus is otherwise, as observed by Nees, allied to *Sesleria*. Dreye's specimens are all past flower, so that the stamens are unknown.—G. BENTHAM.

Fig. 1. Spikelet. 2, 3, 4, 5. Glumes. 6. Palea. 7. Pistil. 8. Caryopsis.

### PLATE 1364.

#### YOANIA JAPONICA, Maxim.

ORCHIDÆ, Tribe NEOTTIÆ (*Arethuseæ*).

*Y. japonica*, Maxim. in *Bull. Acad. Sc. Petersb.*, xviii. 68; *Mel. Biol.*, viii. 647.

HAB. Japan, in Alpine woods in middle Nippon, whence Maximowicz received three specimens from his collector, Tschonoski, in 1864.

'*Caulis* crassus, decolor, erectus, spithameus v. *pedalis*, aphyllus, parte subterranea ramosus, sparse squamatus, villosus, parte epigæa glaber, basi crebre sursum remote vaginis concavis ovatis membranaceis tectus, e quarum superioribus prodeunt flores longe pedunculati, diametro 2-pollicares, in racemum laxum 4-7-florum collecti' (Maxim.). *Sepala* carnosa, libera, patentia, oblonga, lateralia, subinæquilatera. *Petala* sepalis paullo breviora, ovata, conniventia. *Labellum* cum petalis campanulato-connivens, iis æquale, liberum, lata basi sessile, suboblongum, concavum, apice contracto subfornicatum, medio in sacculum breve excavatum, lœve. *Columna* labello brevior, erecta, plana, quadrata; stigma transversum, profunde excavatum, rostello obsoleto; clinandri lobus mediis trianguli-ovatus, laterales semiovati, in alas columnam marginantes abeuntes. *Anthera* lobo medio adnata, persistens, longe rostrata; loculorum facies a margine solutæ; pollinia 4, oblonga, pulposa, sectilia, per bina caudiculis (stipitibus rostelli?) arachnoideo-viscidulis glandulæ affixa, quæ quasi semilunaris margini superiori stigmatis inserta.—(Abridged from Maximowicz).

Of this curious plant, more nearly allied to *Epipogon* than to any other, I have seen no specimen. The accompanying plate is copied from a drawing obligingly sent to us by Dr. Maximowicz, taken from the above-mentioned specimens. He has also sent a copy of a sketch

of Siebold's, representing a somewhat distinct variety or species with larger flowers.—G. BENTHAM.

Fig. 1. Peduncle and flower, side view. 2. Flower, partly laid open, showing the shape of the labellum. 3. Details of the flower: s. sepals, p. petals, l. labellum, c. column. 4. Column, the anther-lid turned up. 5 and 6. Pollen masses.

### PLATE 1365.

#### *NORONHIA BROOMEANA*, Horne.

OLEACEÆ, Tribe OLEINEÆ.

*N. Broomeana*, Horne MSS. Arbor; foliis anguste v. late ellipticis obovatis v. rotundatis breviter apiculatis basi cuneatis subcoriaceis in axillis venarum subtus tomentellis, paniculis lateralibus plurifloris foliis brevioribus, bracteis parvis ovato-lanceolatis sericeis, pedicellis pubescentibus calyce 4-fido subæquilongis, corolla alba 4-partita, fructu ellipsoideo utrinque angustato 8-costato, endocarpio crustaceo deinde bivalvatum dehiscente, semine exalbuminoso, cotyledonibus crassis carnosis.

HAB. Forests near Grand Bassin, Mauritius, Mr. J. Horne.

*Arbor* 50–70-pedalis, ramulis cinereis, innovationibus puberulo-sericeis. *Folia* 3–5 poll. longa  $1\frac{1}{2}$ –5 poll. lata, subtus pallidiora. *Paniculae* basi ramulis hornotinis  $1\frac{1}{2}$ –3 poll. longæ, leviter pubescentes. *Calyx* 4-fidus, lobis ovato-deltoides. *Corolla* glabra, lobis  $\frac{1}{4}$  poll. longis 1 lin. latis. *Fructus* drupaceus 1–2 poll. longus, medio  $\frac{1}{2}$ –1 poll. diam.

Mr. Horne says this fine tree is known in the island as the 'Sandal,' and that he has only seen it in the locality cited, where it is not uncommon.—D. OLIVER.

Fig. 1. Flower. 2. Corolla laid open. 3. Stamen. 4. Calyx and ovary. 5. Longitudinal section of ovary. 6. Fruit. 7. Embryo.

### PLATE 1366. FIG. A.

#### *VERONICA CHEESEMANI*, Benth.

SCROPHULARINEÆ, Tribe DIGITALEÆ.

*V. Cheesemani*; perpusilla, caespitosa, ramosissima, cano-pubescent, ramis gracilibus intricatis, foliis petiolatis cuneato-obovatis grosse obtuse dentatis lobulatis, floribus axillaribus solitariis subsessilibus, calycis segmentis cuneato-spathulatis apices obtusos versus crenatis,

corollæ segmentis obovatis retusis, ovario late ovoideo hispidulo.—  
V. Cheesemani, *Benth. MSS.*

HAB. New Zealand; Nelson, on the Raglan Mountains, Wairau Valley, alt. 5000 ft., *T. F. Cheeseman.*

Cæspites 2–3 poll. diametro; radice gracili elongato, ramis perplurimis filiformibus dense intertextis. *Folia* patentia,  $\frac{1}{2}$ – $\frac{1}{3}$  poll. longa, in petiolum angustata, utrinque puberula; petiolo laminæ æquilongo. *Flores* inconspicui, albi,  $\frac{1}{10}$  poll. diametro. *Calycis* segmenta corolla paullo breviora, recurva. *Capsula* sepalis brevior, subdidymo-globosa, compressa, hispidula, matura ad basin 4-valvis; semina minuta, plano-convexa, fere ellipsoidea, teste granulata.

A very singular little species with the habit of a small *Euphrasia*, belonging to a section of the genus with solitary axillary flowers, of which only one species (*V. canescens*, T. Kirk in 'Trans. New Zeal. Inst.' v. ix. pp. 503 to 519) had previously been discovered in New Zealand. This latter differs in being still smaller, with procumbent stem, almost orbicular entire leaves, and peduncled pale blue flowers, which are large for the size of the plant; it has elliptic acute calyx-segments; its fruit is unknown. The capsule of *V. Cheesemani*, represented at fig. 6, is much narrower and less didymous than in specimens examined by me.—J. D. HOOKER.

Fig. 1. Leaf. 2. Flower. 3. Calyx. 4. Stamens. 5. Ovary. 6. Capsule, all enlarged.

### PLATE 1366. FIG. B.

#### PORANTHERA ALPINA, *Cheesem.*

#### EUPHORBIACEÆ, Tribe STENOLOBIEÆ.

*P. alpina*, herba pusilla, intricatim ramosissima, glaberrima, ramulis ascendentibus foliosis, foliis parvis subimbricatis erecto-patentibus sessilibus lineari-oblongis obtusis coriaceis marginibus fere ad costam crassam recurvis, floribus ad apices ramulorum subfasciculatis, pedunculis foliis brevioribus superne incrassatis, sepalis 5 oblongis obtusis, petalis 0.—*P. alpina*, *Cheesem. MSS.*

HAB. New Zealand; Nelson Province, Port Arthur, alt. 4–500 to 5–800 ft. *T. F. Cheeseman.* H. Jay.

*Herba* 3–5-uncialis, ramis ramulisque flexuosis intertextis teretibus, articulatis, cortice rufo-fusco. *Folia*  $\frac{1}{2}$  poll. longa, opposita et subopposita, crassiæcula, lævia, superne convexa, enervia; costa subtus crassissima; stipulæ minutæ, late obtuse, castaneæ, oppressæ. *Flores*  $\frac{1}{2}$  poll. diam. in axillis supremis, flavescentes, pedicello perianthio

paullo longiore. *Sepala* patula v. incurva. *Stamina* sepalis paullo breviora, filamentis gracilibus; antheræ 4-lobæ, poris verticalium. Ovarium subglobosum, alte 3-lobum, stigmatibus brevibus 2-fidibus.—  
J. D. HOOKER.

Fig. 1. Male flower. 2. Anthers. 3. Female flower. 4. Ovary. 5. Transverse section of do. 6. Vertical section of carpel, all enlarged.

### PLATE 1367.

#### RHANTERIUM EPAPPOSUM, Oliv.

COMPOSITE, Tribe INULOIDEÆ.

*R. epapposum*, Oliver, sp. nov. Suffrutex incanus ramosissimus; ramulis intricatis gracilibus, foliis remotis paucisque linearibus v. anguste ovalibus remote dentatis integrisve parce lanatis v. glabris carnosulis, capitulis solitariis terminalibus pedunculatis, involucro hemisphaerico, bracteis lanceolatis acutis glabratis subesquarrosis, receptaculo paleaceo, floribus ♀ anguste ligulatis, ligula marginibus incurvis apice 3-dentata, ovario glabro epapposo.

HAB. Coast of Beloochistan, Mr. E. Pierce.

*Folia*  $\frac{1}{3}$ —1 poll. longa. *Capitula*  $\frac{1}{3}$ — $\frac{1}{2}$  poll. lata; bracteis pluriseriatis coriaceis exterioribus minoribus. *Receptaculum* paleis coriaceis lanceolatis acuminatis marginibus interdum laciniatis. *Achænia* non vidi.

This plant has very much the aspect of *R. suaveolens*, Desf. (Kralik, Pl. Tunet. 246), though with less rigidly recurved scales of the involucre. We have what I take to be the same plant in the Kew Herbarium from Central Arabia, communicated by Col. Pelly in 1863, who described it as branching from the ground in bushes '1 $\frac{1}{2}$  ft. high, and from 2 to 5 ft. in circumference, and, where abundant, from 3 to 6 ft. apart.'—D. OLIVER.

Fig. 1. Capitulum. 2. Ray-floret and subtending scale. 3. Disk-floret and scale. 4. Anther (the tails are connate in pairs). 5. Stigma.

### PLATE 1368.

#### ERAGROSTIS COELACHYRUM, Benth.

GRAMINEÆ, Tribe FESTUCEÆ (*Eragrostideæ*).

*E. (Plagiostachya) Coelachyrum*, Benth., annua, humilis, foliis brevibus latiusculis, spiculis subdistiche spicatis 3—4-floris glabris, spicis

icem pedunculi 3-4 brevibus confertis, glumis obtusis, caryopsi bicusculata a dorso compressa valde rugosa antice concava. *Eleusine olia*, Hochst. et Stend. Pl. Schimp. exs. n. 799 non R. Br. *Cœlachyrum brevifolium*, Nees in Linnæa, xvi. 221.

B. Sandy shores of the Red Sea, near Djedda, Schimper, *S. Fischer*, 3; between Kosseir and Ras-Benass, Schweinfurth, n. 1577.

*amen* annum, cum pedunculo vix 3-pollicare, basi pluricaule, bus lateralibus prostratis v. ascendentibus, medio erecto, undique tum. *Folia* ad basin caulis plura, in canle florido 1 v. 2, supra iam sessilia, plana, acuta,  $\frac{1}{2}$ -1 poll. longa,  $1\frac{1}{2}$ -2 lin. lata, ligula & nunc vix prominente. *Pedunculus* supra folium sumnum 1- $1\frac{1}{2}$  longum. *Spicæ* ad apicem pedunculi arcte approximatæ, v. intres parum distantes, singulæ 3-4 lin. longæ. *Spicule* in quaque 8-12, subsessiles, 1- $1\frac{1}{2}$  lin. longæ, compressæ at non planæ. *Glumæ* sissimæ, laxè imbricatae, tenuiter membranaceaæ, nervis 3 præntibus. *Caryopsis* gluma paleaque laxè inclusa, libera, late ovata v. rotunda, a dorso compressa, insigniter rugosa, media facie foveola excavata.

Belied to this species is an East Indian Peninsular plant, *Dactylis folia*, Roem., confounded by Steudel and others with the *Æluropus* is, and placed by Kunth in *Poa* (but not the *Æluropus laevis*, .), by Sprengel in *Koeleria*, and by R. Brown in Wallich's logue in *Eleusine*. It has, however, all the characters of *Eragrostis*, may take the name of *E. brevifolia*. It is sometimes quite dwarf, the aspect of *E. Cœlachyrum*, but is generally much more robust branched, never, however, with the peculiar rigid creeping habit of *opus*. The leaves are quite those of *E. Cœlachyrum*, but the spikelets are larger and flatter, with 6 to 12 flowers and hairy glumes, collected into a dense, almost globular head of about  $\frac{1}{2}$  in. diameter. *Æluropus* is readily distinguished by the many-nerved glumes ell as by habit.—G. BENTHAM.

: 1. Spikelets. 2, 3. Lower empty glumes. 4. Flowering glume, side view. 5. same, open, with the margins turned in. 6. Palea, lodicules, and caryopsis. 7. awns and pistil. 8. Caryopsis, back view. 9. The same, front view.

## PLATE 1369.

### NEPHELOCHLOA ORIENTALIS, Boiss.

GRAMINEÆ, Tribe FESTUCEÆ (*Eufestuceæ*).

*orientalis*, Boiss. *Diagn. Pl. Or.* v. 73.

B. Levant, province of Caria near Gheyra, Boissier, and in Asia, near Ouchak, Balansa.

*Gramen annuum, erectum, tenue. Folia pauca, anguste linearia, siccitate convoluta, 1-2 poll. longa; ligula fimbriato-lacera. Panicle fere *Airæ involucrata*, Cav., oblonga, laxa, 3-6-pollicaris, ramis numerosis verticillatis erecto-patentibus capillaribus parce ramulosis, verticalium inferiorum sepe sterilibus; pedicelli capillares, spiculae apicem longiores. Spiculae 5-6-floræ, compressæ, distichæ, pilosulae, bene evolutæ fere 3 lin. longæ, in pluribus speciminiibus minores, rhachilla glabra, floribus hermaphroditis. Glumæ 2 inferiores vacuae sub articulatione persistentes, membranaceo-hyalinae, vix venosæ, obtusæ, muticae, secunda infima paullo longior, quam florentia paullo brevior; florentia vix carinatae, basi 5- rarius 7-nerves, apice scariose, 2-fidae, arista inter lobos tenui recta lobis longiore. Palea hyalina, 2-dentata, 2-carinata. Lodiculae inconspicuae. Stamina 3. Styli breviassimi, stigmatibus brevibus plumosis. Caryopsis adhuc immatura a palea libera.*

This elegant grass is the only one known of the genus, for the Asiatic species added to it by Grisebach by no means agree with Boissier's character, and should more properly be restored to *Poa*, in which genus they were originally published.—G. BENTHAM.

Fig. 1. Spikelet. 2. Lowest empty glume. 3. Second empty glume. 4. Flowering glume. 5. Palea. 6. Flowering glume, side view. 7. Stamens and pistil.

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## PLATE 1370.

### ERAGROSTIS PIERCII, Benth.

GRAMINEÆ, Tribe FESTUCEÆ (*Eragrostideæ*),

E. (Platystachya) Piercii, Benth. sp. nov., caulinis elongatis laxis, spiculis secus ramos tenues simplices paniculæ laxæ pedicellatis planis ovatis 8-16-floris, rhachilla articulata, glumis obtusis v. rariis mucronatis glabris, caryopsi lœvi.

HAB. Coast of Beluchistan, O. Pierce.

*Gramen ut videtur perenne, glabrum. Caules basi conferti crassiusculique, decumbentes v. laxe ascendentes, cum inflorescentia 1½-pedales longioresque, in parte inferiore foliati interdumque ramosi. Folia plana, subulato-acuminata, 1-2-pollicaria v. rarius longiora. Panicula longe pedunculata, tenuis, laxa, ramis 3-7 fere filiformibus dissitis v. superioribus subgeminis, inferioribus interdum semipedalibus, superioribus brevioribus. Spiculae secus ramulos distantes, pedicello brevi sepe capillari fultæ, bene evolutæ 3 lin. longæ, 2 lin. latæ. Glumæ complicate, distiche imbricate, inferiores linea paullo longiores interdum etsi rarius mucronatae, 2 infimæ vacuae sed florentibus similes*

post fructus delapesos persistentes, superiores gradatim minores obtuse.  
*Caryopsis oblonga*, compressiuscula, lœvis.—G. BENTHAM.

Fig. 1. Spikelet. 2, 3. Glumes, side view. 4. Glume laid open. 5. Palea. 6. Gramen. 7. Pistil and lodicules. 8. Caryopsis.

## PLATE 1371.

**ERAGROSTIS SCHIMPERI, Benth.**

**GRAMINEÆ, Tribe FESTUCEÆ (Eragrostideæ).**

**E. (Plagiostachya) Schimperi, Benth.**, erecta foliis angustis longiusculis, spica v. racemo terminali simplici, spiculis brevissime pedicellatis longiusculis 8–10-floris, glumis dissitis angustis acutis, caryopsi lœvi. *Harpache Schimperi*, Hochst. in A. Rich. Fl. Abyss. ii. 431 et in Flora 1855, 331.

HAB. Near Adoa, Abyssinia, Schimper, n. 171, Rohr.

*Gramen* forte annum, caules tamen dense cæspitosi  $\frac{1}{2}$ –1-pedales. *Folium* angusta, nunc semipedalia nunc multo minora, ad basin laminæ sepius ciliata, pleraque ad basin caulis conferta, secus caulem pauca. *Pedunculus* supra folium supremum brevis v. elongatus. *Spica* laxa, 1–3-pollicaris, in speciminibus nostris secunda, sed ex Hochstettero sæpe quaquaversa. *Spicula* perfecta semipollulares, pedicello  $\frac{1}{2}$ -lin. longo fultæ. *Glumæ* 2 inferiores vacuæ, inæquales, florentes longiores, angustæ, acuminate, 3-nerves, variant  $1\frac{1}{2}$  ad 2 lin. longæ. *Palea* multo brevior, incurva, 2-carinata, post fructum glumamque delapsos diu persistens. *Caryopsis oblonga*, lœvis.

Hochstetter, in pointing out the affinity of this plant to *Eragrostis*, distinguishes it chiefly on account of the third glume enclosing only a palea without any perfect flower, and thus showing an approach to *Uniola*; but *Uniola*, besides the difference in the nerves of the glumes, has at least 3 and usually 4 to 6 of the lower glumes quite empty. The continuous rhachilla and persistent palea of our plant are specially characteristic of *Eragrostis*.—G. BENTHAM.

Fig. 1. Spikelet. 2, 3. Lower empty glumes. 4. Flowering glume. 5. Palea. 6. Pistil and lodicules. 7. Stamen. 8. Caryopsis.

## PLATE 1372.

**MUNROA SQUARROSA, Torr.**GRAMINEÆ, Tribe FESTUCEÆ (*Seslerieæ*).*M. squarrosa*, *Torr. Bot. Whipple Exped.* 102 (158).

HAB. North America; Western Texas, New Mexico, Sonora, up to Colorado.

*Gramen annuum, humile, multicaule, caulis primariis 2-4-pollis caribus apice fasciculato-ramosis saeppeque fibrilliferis quasi proliferis rigidulis glabris. Folia ad basin fasciculorum conferta, linearia, acutissima, rigidula, rarius pollicem excedentia. Spiculae inter foliorum fasciculos panicæ, subsessiles et fere occultæ, saepius 3-floræ, floribus hermaphroditis, rhachilla supra glumas inferiores articulata, sub quoque flore plus minus elongata. Glume 2 inferiores vacuae, sub articulatione persistentes, lanceolate, acutæ, hyalinae, enerves, muticæ; florentes majores, 3-nerves, mucronato-subaristatae, ad utrumque latus interdum in dentem brevem productæ, superiores vacuae 1-2, florentibus similes nisi minores. Palea hyalina, complicata, anguste 2-carinata, florem amplectens. Stamina 3. Stylæ distincti, elongati, a basi laxe breviterque pilosi. Caryopsis anguste oblonga, palea multo brevior, libera.*

This genus, dedicated to the distinguished agrostologist the late General Munro, is now represented by two or three species from extra-tropical South America, differing from the northern one in a few points of structure, but evidently congeners and with the same habits.—  
G. BENTHAM.

Fig. 1. Cluster of leaves and spikelets. 2. Spikelet. 3, 4. Outer empty glumes. 5. Flowering glume. 6. The same opened out. 7. Palea. 8. Pistil. 9. Caryopsis

## PLATE 1373.

**FINGERHUTHIA AFRICANA, Lehm.**GRAMINEÆ, Tribe FESTUCEÆ (*Seslerieæ*).*F. africana*, *Lehm. Cat. Sem. Hort. Hamb.* 1834. *F. ciliata* and *F. sesleriaformis*, *Nees, Fl. Afr. Austr. Gram.* 136, 138.

HAB. South Africa, apparently common in the colony from Albany and George districts eastward, and recently found also in Afghanistan by Dr. Aitchison.

*Gramen cæspitosum, erectum, rigidulum, caule foliis glabris.*

-2-pedale. *Folia* inferiora conferta brevia, superiora paucā distantia, *agina* longa; *lamina* anguste linearis, plana, acuta v. in acumen sublatum producta, 2-5 poll. longa; *ligula* brevissima, ciliata. *Spica* terminalia, longe pedunculata, dense cylindracea ei *Phlei* subsimilis, -1½ poll. longa, 4-5 lin. diametro. *Spiculae* 1- rarius 2-floræ, circa hachin inarticulatam densissime confertæ, singulæ cum pedicello brevissimo articulatæ, compressæ, rhachilla ultra florem producta tipitiformi v. glumifera, flore unico v. infimo hermaphrodito, superiore tum adsit masculo. *Spiculae* infimæ et summæ ejusdem spicæ diminutæ, vacuae v. ad glumas vacuas subulatas reductæ, diu persistentes, perfectæ fructiferæ caducæ. *Gluma* 2 inferiores vacuae, complicato-arinate breviter aristatae, parum inæquales, plus minus ciliatae; tertia lorem vacuis similis nisi paulo latior rigidiorque, arista brevi nunc ad nucronem reducta; terminalis minor, vacua v. paleam solam rarius lorem masculum fovere. *Palea* gluma paulo brevior, subhyalina, -carinata. *Stamina* 3. *Styli* distincti, elongati, stigmatibus fibriformibus pilis brevibus villosis. *Caryopsis* oblonga, lœvis, gluma aleaque laxe inclusa, a palea libera.

This grass is interesting as the only exception to the great series of Poaceæ in the articulation of the pedicel below the spikelet, whilst the empty glume or male flower above the fertile one removes it from the Panicaceæ. The geographical range is also unusual, for it has never been found in any station intermediate between South Africa and Afghanistan.—G. BENTHAM.

Fig. 1. Spikelet. 2. Outer empty glume. 3. Flowering glume. 4. The same spread out. 5. Palea. 6. Pistil. 7. Caryopsis.

## PLATE 1374.

### DISSANTHELIUM SUPINUM, Trin.

GRAMINEÆ, Tribe FESTUCEÆ (*Eragrostideæ*).

**D. supinum**, Trin. in Linnæa, x. 305, humile, dense cæspitosum, panicula brevi dense spiciformi, spiculis 2-floris. *Phalaridium peruanum*, Nees in Pl. Meyen. 161 *Dissanthelium sclerochloides*, Fourn. Iran. Mexic., 112.

HAB. Andes of Peru and Bolivia, Lechler, n. 1832, Mandon, n. 1845, apparently at considerable elevations; also in Mexico (Fournier).

*Caules* basi vaginis foliorum obtecti, cum foliis dense cæspitosis -2-pollicares, rarius cum panicula 3-pollicares, glabri. *Folia* angusto-nearia, acuta, ligula membranacea 1-2 lin. longa. *Pedunculus* vix

e foliis exsertus v. demum folia breviter superans. *Panicula* oblonga, subpollicaris, densa v. basi paullo latior laxiorque. *Spiculae* 2-flora, rhachilla glabra sub floribus articulata, ultra flores in stipitem minutam producta, floribus hermaphroditis. *Gluma* 2 inferiores vacue, sub articulatione persistentes, linea paullo longiores, angustae, carinatae, 3-nerves, acute, exaristatae, parum inaequales; florentes multo breviores, latiores, obtusiusculae, obtuse carinatae, 3-nerves, nervis lateralibus marginalibus v. interdum obscuris. *Palea* gluma paullo brevir, 2-carinata, 2-dentata. *Stamina* 3. *Styli* brevissimi, stigmatibus plumosis. *Caryopsis* oblonga, subtriangulata, libera.

In this genus the proportion of the lower empty glumes to the following ones is that of the European *Schismus*, but the venation of the glumes places it in a different subtribe. I have not seen any Mexican specimens, but Fournier has identified them with Lechler's, and he describes the spikelets as 2-flowered only, which character distinguishes this species from the Californian one. Mandon's specimens, n. 1346, are probably the same *D. supinum* in a younger state.—G. BENTHAM.

Fig. 1. Spikelet. 2. The same opened out, showing the summit of the rhachilla. 3, 4. Lower empty glumes. 5. Flowering glume. 6. Palea. 7. Pistil and lodicules. 8. Caryopsis.

## PLATE 1375.

### DISSANTHELIUM CALIFORNICUM, Benth.

GRAMINEÆ, Tribe FESTUCEÆ (*Eragrostideæ*).

*D. californicum*, Benth., tenuer, erectum, panicula longa angusto-lata, spiculis saepissime 3-floris.—*Stenochloa californica*, Nutt. in 'Journ. Acad. Philad.' ser. 2, i. 189.

HAB. Islands of the coast of Lower California, Santa Catalina, Gabel; Guadelupe Island, E. Palmer, n. 96.

*Caules* annui, graciles, erecti,  $\frac{1}{2}$ -l-pedales. *Folia* angusta plana, longiuscula. *Panicula* 2-3-pollicaris. *Spiculae* quam in *D. supinum* paullo maiores et in specimine Gabeliano uti in Palmerianis semper 3-floras vidi, a Nuttalio tamen 2-floræ dicuntur. Cætera omnia *D. supini*.—G. BENTHAM.

Fig. 1. Spikelet. 2, 3. Lower empty glumes. 4. Flowering glume. 5. The same laid open. 6. Palea. 7. Pistil. 8. Caryopsis.

# ICONES PLANTARUM.

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## PLATE 1376.

### CRYPTOCHLORIS SPATHACEA, Benth.

GRAMINEÆ, Tribe CHLORIDEÆ.

*Cryptochloris*, gen. nov., Char. gen. *Spiculae* 2-floræ (rarius 1-floræ?) secus rhachin continuum spicæ subsecundæ sessiles, 2-seriatim confertæ. *Glumæ* 2 inferiores vacuæ, persistentes, angustissime lineares, compli- catae, glabræ, parum inæquales, spiculam subæquantes, acute, muticæ; florentes membranaceæ, late ovatæ, 1-nervæ, extus longæ ciliatæ, apice minute 2-dentatæ, sub apice dorso arista rigida instructæ; superiores plures vacuæ obovatæ v. subglobosæ, gradatim minores glabrioresque, omnes aristatæ. *Palea* gluma florenti paullo minor, 2-dentata, pilosula, mutica. *Stamina* ... *Stylus* ... *Caryopsis* gluma inclusa, obovoidea, libera.—*Gramen annuum*, nanum, spica simplici densa bractea spathiformi semi-inclusa.

*C. spathacea*, Benth., single species.

HAB. Most probably Patagonia, the only specimen known being in a collection made by Capt. Middleton almost entirely in Patagonia, and deposited in Forsyth's Herbarium, though this particular specimen had no locality assigned to it.

*Gramen annuum*, vix 2-pollicare, ramosum, caulis infra inflores- centiam  $\frac{1}{2}$ -1-pollicaribus, foliis paucis laxe vaginatis, lamina linearis. Bractea spathiformis unica (v. 2?), terminalis, 8-10 lin. longa, latius- cula, membranacea, spicam fere omnino includens. Spica intra bracteam sessilis, setis aristisque glumarum florentium quasi plumosa.

The structure of the spikelets is very nearly that of *Chloris* itself, but they are generally, if not always, two perfect flowers, and the habit is very peculiar.—G. BENTHAM.

Fig. 1. Inflorescence after the fall of the spikelets. 2. Deciduous fertile part of the spikelet. 3, 4. Flowering glumes. 5. Palea. 6. Caryopsis. 7, 8, 9. Upper empty glumes.

## PLATE 1377.

### CRASPEDORHACHIS AFRICANA, Benth.

#### GRAMINEÆ, Tribe CHLORIDÆ.

*Craspedorhachis*, Benth. gen. nov., Char. gen. *Spiculae* 1-floræ, secus rhachin marginatau spicarum unilateralium subsessiles, rachilla brevissima ultra florem non producta, flore hermaphrodito. *Glumes* 3, exaristatae, 2 inferiores vacuae, persistentes, carinatae, acutæ, 1-nervæ, rigidule membranaceæ, subaequales, infima rachi contigua, secunda per anthesin patens; tertia florens plures brevior, lata, subtruncata, tenuissime hyalina, ciliata. *Palea* gluma vix brevior, angustior, tenuissime hyalina, apice breviter 2-fida v. 2-dentata. *Stamens* 3. *Stylæ* sub anthesi breves, distincti, stigmatibus plumosia. *Caryopsis* ...—*Grumen* elatiusculum, foliis paucis angustis. *Spicæ* plures, simplices, secus pedunculum communem sparsæ, erectiusculæ.

*C. africana*, Benth., single species.

HAB. Tropical Africa, on the Zambesi, opposite Senna, J. Kirk.

*Caulæ* tenues, rigiduli, 1½–2-pedales. *Folia* radicalia v. secus caules pauca, vaginis longiusculis striatis; lamina anguste linearis, supra subulato-teres, 3–4-pollicaris; ligula hyalina pluriseta. *Panicula* supra vaginam summam breviter pedunculata, fere semipedalis, rachi communi simplici. *Spicæ* secus rhachin 10–15, inter se parum distantes, summas 2–3 confertæ, omnes a basi floriferæ, 2–3-pollicares, rachi leviter flexuosa ad latera acute marginata. *Spiculae* sessiles, arcte appressæ, fere 2 lin. longæ.

The genus is in many respects allied in character as well as in habit to the North American *Schedonardus* figured above (1860), but it is readily distinguished by the very small hyaline flowering glume and palea, almost resembling lodicules.—G. BENTHAM.

Fig. 1. Portion of a spike with 3 spikelets. 2. Outer empty glumes. 3, 4. Flowering glume. 5. Palea. 6. Stamen. 7. Ovary and styles.

## PLATE 1378.

## SCHAFFNERA GRACILIS, Benth.

GRAMINEÆ, Tribe ZOYSIEÆ?

*finera*, gen. nov., Char. gen. *Spiculae* 1-floræ, in pedunculis bus 1–3 subsessiles, articulatæ, rhachilla brevissima ultra florem ducta, flore hermaphroditæ interdum sterili. *Glumæ* 2, inferior spiculam æquans, co-nervis, 3–5-aristata, aristis lateralibus basi hyalino-appendiculatis, superior florens membranacea, fere 1, brevissima 2-loba, arista inter lobos fere dorsali longiuscula s. *Palea* gluma paullo brevior, tenuiter hyalina, 2-nervis, apice v. 2-dentata. *Stamina* 3. *Stylæ* 2, distincti, elongati, apice ex plumoso-stigmatosi. *Græmen* humile, annuum. Pedunculi in foliorum floralium inclusi, inferiores interdum solitarii, tres in vagina 3-œ, fasciculati.

*gracilis*, Benth., single species.

1. Mexico; mountains of San Miguelita, in the valley of San Potosí, J. G. Schaffner.

les dense fasciculati, basi ramosi, ascendentæ v. erecti, tennes, illicares, uti tota planta glabri. *Folia* inferiora ad basin ramorum ta, secus caules plura dissipata fere omnia floralia; vaginæ rigidulæ, e, 2–4 lin. longæ; laminæ angustæ, interdum subulatae,  $\frac{1}{2}$ – $\frac{1}{4}$ -pol.; ligulæ lanceolatae hyalinae. *Spicularum* fasciculi vix foliaunt. *Glumæ* ipsæ vix linea longiores; aristæ sœpe 3-lineares, s, rigidulæ, scabro-denticulatae. *Caryopsis* in speciminiibus vix ario aucta.

The affinities of this plant are still very doubtful. Although the bare of the spikelets is technically that of *Zoysieæ*, the inflorescence is to that of some *Andropogoneæ*, and the 3- or 5-awned empty spikes remind one of *Pappophoreæ*.—G. BENTHAM.

1. Cluster of 3 peduncles, each bearing 2 or 3 spikelets. 2. Peduncle with spikelets. 3. Peduncle with 2 spikelets. 4. Single spikelet. 5. Empty glume. 6. Fertile glume. 7. Palea. 8. Ovary and styles.

## PLATE 1379.

CLEISTACHNE SORGHOIDES, *Benth.*

GRAMINEÆ, Tribe TRISTEGINEÆ.

*Cleistachne*, *Benth. gen. nov.*, Char. gen. *Spiculae* 1-floræ, oblongæ, secus paniculæ ramos capillares inarticulatos dissitæ, in pedicellis articulatæ, flore hermaphrodito. *Glumæ* 4, 2 inferiores vacua, subæquales, latæ, rigidæ, acutiusculæ, muticæ, plurinerves, circa florem convolutæ, clausæ; tertia subbrevior, vacua, angusta, hyalina, superne membranacea villosaque; quarta sub flore a basi minima hyalina in aristam longam rigidam tortam producta. *Palea* minima, hyalina truncata ciliata; lodiculæ majusculæ. *Stamina* 3. *Stylæ* distinctæ, stigmatibus plumosia. *Caryopsis* oblonga, glumis inferioribus rigida, coriaceis arcte inclusa.—*Gramen* elatiusculum, foliis longis plenis. *Panicula* anguste thyroidea, floribunda, pilosa, ramulis erectis flexuosis.

*C. sorghoides*, *Benth.*, single species.

HAB. Tropical Africa, Shubanga, on the Zambesi, *J. Kirk*; and perhaps a variety with rather smaller spikelets, East Indian Peninsula, Bababoodun hills, Malabar, *Law*.

*Caules* fide *Kirkii* 7-pedales, rigiduli. *Folia* pauca, vaginis longis sparse setiferis; lamina plana, pedalis v. longior, breviter subulate-acuminata; ligula brevis, ovata v. lata, brunnea. *Panicula* supra folium summum breviter pedunculata, 6–10-pollicaria, angusta, dense, ramis ramulisque numerosis 1–2-pollicaribus v. interdum per se longioribus. *Spiculae* brevissime pedicellatae, oblongæ, 2-lin. longa, dorso pilosa; aristæ  $\frac{1}{2}$ –1-pollicares.

This plant at first sight resembles some specimens of *Sorghum fulvum*, but the total absence of the second spikelet (whether perfect or rudimentary) to each node or notch removes it from the *Anisopogoneæ*, and brings it into connection with *Arundinella*. The spikelets in the East Indian specimens are rather darker coloured and perhaps smaller than in the African ones, but I can find no other difference.—*G. BENTHAM.*

Fig. 1. Branch of the panicle. 2, 3. Outer empty glumes. 4. Third empty glume. 5. Flowering glume. 6. Palea. 7. Lodicules. 8. Ovary and styles.

## PLATE 1380.

CYPHOSTIGMA PULCHELLUM, *Benth.*

SCITAMINEAE, Tribe ZINCIBEREEAE.

*phostigma*, *Benth. gen. nov.*, Char. gen. *Calyx* supra basin atam tubulosus, per anthesin spathaceo-fissus. *Corollæ* tubus 3, e calyce breviter exsertus; lobi 3, anguste oblongi, subæquales, ito-patentes. *Staminodia* lateralia 0; labellum orbiculato-reniforme, obscure 3-lobum, lobo medio magis prominente sub-2-lobo; ra in filamento brevi erecta, loculis parallelis v. apice parum gentibus, connectivo angusto ultra loculos in cristam semi-ovalatam petaloideam margine crenulato-crispam dilatato. *Ovarium* saltem 3-loculare; stylus filiformis, stigmate exerto crasso oblongo iuxto gibbo circa foveolam terminalem ciliolato; ovula in quoque loculo plurima, sub-2-seriata. *Fructus* ... — Rhizoma horizontale, rum vaginæ longæ convolutæ caulem simulantes. Scapi florentes libi, e rhizomate ad basin foliorum elongati, procumbentes, ramulosi, us in ramulis sparsis.

*pulchellum*, *Benth.*, single species. *Amomum pulchellum*, Thwaites, t. Pl. Zeyl. 318.

3. Ceylon; forests of the Central Province, up to an elevation 100 feet, *Thwaites*, *C.P.*, n. 2736.

*Zoma* durum, breve, horizontale. *Folia* pauca; vaginæ compli-convolutæ, striato-venosæ venulis transversis interdum quasi atæ, columnnam cauliformem  $\frac{1}{2}$ -pedalem formantes; petioli supra am 1-3-pollicares, lamina oblonga,  $\frac{1}{2}$ -2-pedalis, præter costam s pilosulam glabra. Scapi florentes  $\frac{1}{2}$ -1-pedales, procumbentes, si, fere a basi floribundi, ramulis nunc brevissimis nunc 2-3-pollicis. Bractee vaginantes ad basin ramulorum et florum confertæ v. e neo imbricatae. Flores ad axillas bractearum breviter pedicellati.  $\sigma$  tubus ad 9 lin. longus, lobi vix breviores, extus puberulæ, s. venis 3 fulvis. *Labellum* et antheræ crista inter se fere a. rosea, ad apicem antheræ horizontaliter patentia, 9-10 lin. *Stylus* supra antheram brevissime exsertus.

Plant was placed by Thwaites in *Amomum* on account of the crest or appendage to the anther, but in the large genus *Amomum*, so constant in its inflorescence, a dense erect spike with large bracts, the appendage to the anther is exceedingly variable, sometimes disappears entirely; and inflorescence appears generally to afford one of the best generic characters in the order, and here

it appears to be accompanied by a peculiar stigma, and the remarkable shape given to the flower by the broad, equally-spreading labellum and anther-appendage. The inflorescence approaches that of the *Elettaria Cardamomum*. Miss Smith's drawing is made up partly from a series of excellent specimens received from Mr. Thwaites, partly from a coloured drawing taken by him from living specimens.—G. BENTHAM.

Fig. 1. Anther. 2, 3. Stigma. 4. Ovary. 5. The same, transverse section.

### PLATE 1381.

#### ERAGROSTIS WIGHTIANA, Benth.

##### GRAMINEÆ, Tribe FESTUCEÆ.

*E. (Myriostachya) Wightiana, Benth.* Erecta, elata, longissimis panicula angusta, dense thyrsoides, ramulis numerosissimis quam versis confertis, spiculis breviter pedicellatis 4–6-floribus, glabris 2 exterioribus vacuis parvis in aristam v. mucronem longum desubtibus, florentibus majoribus breviter mucronato-acuminatis. *Leptochloa Wightiana*, Nees in Steud. *Syn. Glum.* i. 209.

HAB. East India, East Bengal, *Griffith*; Sunderbunds, *Wall.* *Herb. Ind.* n. 3823.

*Caulis* validus, pluripedalis, uti tota planta glaber. *Folia* longissimae erecta, rigidula, e basi latiuscula longe subulato-acuminata. *Panicles* 1–2-pedalis, cylindraceæ; *ramis* confertis 1–2-pollicaribus erubescens patentibus simplicibus v. parce ramulosis, rhachi glabra v. minime pubescente. *Pedicelli* breves, filiformes. *Spiculae* 3–4 lin. lo. *Glumæ* florentes 1½ lin. longæ, rigidulæ, carinatæ, 3-nerves, brevis mucronatæ, 2 exteriores vacuae vix lineam longæ sed sepius in articulo spiculam subsuperantem desinentes, summae vacuae 1–2, parvae.

This species has so peculiar an inflorescence that it is at present difficult to admit it into the genus; it is, however, in some measure connected with it through the *E. cynosuroides*. It has nothing of the chlorideous inflorescence characteristic of *Leptochloa*. Several specimens are affected with a peculiar gall, forming here and there nodes in the panicle.—G. BENTHAM.

Fig. 1. End of a branch of the panicle. 2, 3. Outer empty glumes. 4. Flag glume. 5. Palea. 6. Young caryopsis.

## PLATE 1382.

PSEUDOCENTRUM MINUS, *Benth.*

## OCHIDÆ, Tribe NEOTTIÆ.

*P. minus*, *Benth.* sp. n., perianthio laxe pilosulo, mento linearis clauso ovario squilongo v. vix longiore.

HAB. Jamaica, Portland Gap, at an elevation of 5,400 feet, *D. Morris.*

*Fibrae radicales* in rhizomate brevi fasciculatae, carnosulae. *Caulis* erectus, simplex, cum spica pedalis v. paullo altior. *Folia* 2-3-inferiora subradicalia v. prope basin caulis, supra vaginam brevem longiuscula petiolata, ovato-lanceolata v. oblonga, acutiuscula v. obtusa, 3-5-pollicaria, 1-2 superiora multo minora, subsessilia, basi vaginantia. *Spica* densa, 3-6-pollicaris, floribus quaquaversis ad axillas bractearum lanceolatarum subsessilibus erecto-patentibus, pilis crispulis laxe vestitis. *Ovarium* cylindraceum, basi attenuatum, vix 5 lin. longum. *Sepalum* posticum (inferum) patens, lato-lanceolatum, ovario plus duplo brevius; lateralia in mentum seu tubum cylindraceum ascendens ovario squilongum connata, ad marginem tubi in limbum patens emarginatum brevissime expansa. *Petala* sepalo postico limidio breviora angustioraque, patentia. *Labellum* ad basin columnæ sessilis, ad os menti in lobis 2 breves falcatos divisum, intra mentum in laminam longe linearem in fundo menti lobo inflexo clausam profluctum. *Columna* brevissima; clinandrium membranaceo-2-lobum. *Anthera* inter lobos clinandrii brevissime stipitata, erecta, 2 locularis; pollinia in loculis gemina, pulvereo-granulosa, acuminata. *Stigma* concavum ad apicem truncatum columnæ pone rostellum breviter lineare, glandula terminatum.

The habit and essential character are entirely those of the original *P. macrostachyum*, Lindl., from New Grenada, which, however, has larger, more glabrous flowers with the sepaline mentum twice as long as the ovary and some other differences in the details of the flowers.  
—G. BENTHAM.

Fig. 1. Flower. 2. Labellum. 3. Column and anther-case. 4. Anthers. 5. pollen masses.

## PLATE 1383.

## PHEROSPHERA FITZGERALDI, F. Muell.

CONIFERÆ, Tribe TAXÆ.

*P. Fitzgeraldi*; monoica, foliis ericoideis decurrenti-adnatis erecto-incurvis crasse subulatis obtusis v. mucronulatis dorso rotundatis v. obscure 3-gonis facie leviter conversis, staminum columnæ ovoides sessili, connectivo oblongo apice rotundato loculis basilaribus squillata, amentis ♀ paucifloris erectis, squamis subulato-lanceolatis acutis fasci exsculptis, semina ellipsoidea erecta paullo superantibus, testa coriacea obtuse 3-costata.

*P. Fitzgeraldi*, F. Muell, MS. *Dacrydium Fitzgeraldi*, F. Muell, Fragm. Phytogr. Austral., xi. p. 102.

HAB. New South Wales, in dense woods of the Blue Mountains, near the Katoomba Falls, R. Fitzgerald, &c.

*Frutex* flaccidus, ad 9-pedalis, ramis infimis prostratis radicantibus. *Folia* laxe imbricata,  $\frac{1}{2}$ — $\frac{1}{6}$  poll. longa, pallide viridia, coriacea, enervia. *Columna staminum*  $\frac{1}{6}$  poll. longa; antheræ 12—16, his imbricatæ, dorso connexæ, loculis contiguis hiantibus. *Amenta* squamæ 3—6, foliis paullo longiores, suberectæ, lamine ovulifero. *Ovulum* facie squamæ basin versus insertum, erectum.

In the total absence of an ovuliferous disk, this plant differs from *Dacrydium*, and agrees with *Pherosphaera*, of which a single Tasmania species was previously known, thus tending to confirm this genus (which was considered as somewhat dubious in the 'Genera Plantarum') by the addition of a species from a widely distant locality. Baron von Mueller, to whom I am indebted for the specimen of *P. Fitzgeraldi* here figured, suggests ('Fragmenta,' l.c.) that *Dacrydium Kirkii* of New Zealand, having 'an often evanescent disk,' may be a congener; but this latter plant is so clearly a *Dacrydium* in habit and in the form of the scales and fruit that it rather tends to suppress *Pherosphaera*, or to establish it on other characters, than to so enlarge it as to include *D. Kirkii*.—J. D. HOOKER.

Fig. 1. Leaves and staminal column. 2. Anther. 3. Leaves and ♀ cone scale and young seed. 5. Vertical section of immature seed. All enlarged.

## PLATE 1384.

**CAMPYLOSIPHON PURPURASCENS, Benth.**

## BURMANNIACEÆ.

*Camphylosiphon*, gen. nov., Char. gen. *Perianthii* tubus tenuis, incurvus, exalatus; lobi 6, 2-seriati, omnes angusti, parum inaequales. *Antheræ* 3, intra tubum infra lobos inferiores subsessiles, connectivo latiusculo supra loculos non producto, loculi ad latera connectivi prominentes, transversim in valvas 2 superpositas dehiscentes. *Ovarium* inferum, elongatum, 3-loculare, 6-costatum; stylus perianthio inclusus, apice clavatus, in lobos 3 latos subdivisus; ovula in placentis axilibus numerosissima. *Capsula* angusta, incurva, exalata, perianthio marcescente coronata. *Semina* numerosissima, angustato-globosa, testa appressa.—*Herba* tenuis succulenta, aphylla. *Flores* in racemo terminali simplici v. bifido breviter pedicellati.

***C. purpurascens*, Benth.**, single species.

HAB. North Brazil and Venezuela, on tree-roots in moist Catingas at Panuré, on the Rio Uaupès and San Carlos on the Rio Negro, R. Spruce, n. 2492; forest behind Manaos on the Amazon, J. W. H. Traill, and apparently the same species, Polaro river, British Guiana, E. F. im Thurn.

*Herba annua* (v. e rhizomate perenni ?), semipedalis v. paulo altior, pallide purpurascens, caule simplici v. basi duplicato erecto, squamis sparsis concoloribus erectis breviter vaginantibus instructo, superioribus paulo longioribus in bracteas flores subtendentes abeuntibus. *Flores* in racemo pauci, breviter pedicellati, pallide purpurascentes subcaerulecentes v. in planta Guianensi albidi. *Perianthium* cum ovario 9–11 lin. longum, tenue, incurvum, limbi lobi linear-lanceolati, acuti, ad 3 lin. longi, interiores exterioribus paulo angustiores. *Antheræ Burmanniæ*, loculis insigniter prominentibus, valvis dehiscentia omnino discretis. *Stylis* apex insigniter incrassatus, lobis latis crenatis.—G. BENTHAM.

Fig. 1. Portion of the perianth-tube and four of the lobes, opened out showing two of the anthers. 2, 3. Anthers open, showing the two valves of each cell. 4. Apex of the style. 5. Ovary, transverse section. All magnified.

## PLATE 1385.

***HELIETTA PARVIFOLIA*, Benth.**

RUTACEÆ, Tribe TODDALIEÆ.

*H. parvifolia*, Benth., foliolis oblongis v. anguste obovatis obtusis, terminali  $\frac{1}{2}$ - $1\frac{1}{2}$ -pollicari, lateralibus multo minoribus, panicula sessili petiolos foliorum terminalium vix excedente, floribus 4-meris.

HAB. Mexico, State of Nuevo Leon, near Monterey, *Berlandier*, n. 1404 (144); *E. Palmer*, n. 142; and State of Coahuila, 24 miles N.E. of Monclova, *E. Palmer*, n. 143, 144.

*Frutex ramosissimus*, glaber. *Folia opposita*, 3-foliolata; foliolis ad apicem petioli 4-8 lin. longi sessilia, terminale nunc anguste oblongum 1- $1\frac{1}{2}$  pollicare basi longiuscule angustatum, nunc obovatum vix semipollucare, lateralia sepius dimidio minora basi obliqua, omnia integerrima, punctis pellucidis parvis in folio juniore minutis conspersa. *Panicula* v. cyma trichotoma inter folia paris ultimi brevissime pedunculata, parva, pauciflora, rarius petiolos breviter superans. *Pedicelli* brevissimi, minute 2-bracteolati. *Sepala* 4; parva. *Petala* 4, sepalis 2-3-plo longiora, leviter imbricata. *Staminæ* 4 circa discum cyathiformem truncatum affixa. *Ovarium* 4-lobum, 4-loculare. *Ovula* in quoque loculo 2, collateralia. *Style* tenuissimum columnaris, stigmate capitato 3-sulco. *Fructus* ex carpellis 4 samaroideis ante maturitatem coherentibus radiatim pateutibus maturitate solvendis indehiscentibus; samarae singulæ nucleo oblongo erecto dure 3-5 lin. longo, in alam subsemipollucarem rigidulam late ovatam v. rotundatam a latere producto. *Semen* unicum, oblongum, lateraliter affixum; embryo in albumine carnosæ axilis, rectus, radicula brevi supra.

This plant was originally sent by Asa Gray with loose fruits received as belonging to it, which proved to be those of a *Ptelea*, and induced Helmsley to describe it in the 'Botany of Central America,' i. 170, as *Ptelea parvifolia*, A. Gray. Palmer's specimens, however, both in flower and with the fruit attached, show that the real fruits as well as the flowers correspond in every respect with the detailed character of the genus *Helietta* given by Tulasne in the 'Ann. Sc. Nat.' ser. 3, vii. 280. Tulasne's original species, *S. Pleana* from New Grenada, of which we have probably rather imperfect specimens gathered by Triana, differs chiefly in the thinner leaflets fully twice the size of those of *S. parvifolia*, and the looser panicle with smaller flowers. A third species was gathered by Balansa in Paraguay and distributed under n. 2515, described as a small tree. It is near *S. parvifolia*, but

lets are longer, remarkable for the rigid point terminating them, the looser panicles, the flowers all 5-merous, but agreeing in all respects as well as the fruits with those of the *H. parvifolia*. It is thus characterised: *H. apiculata*, Benth., foliolis ellipticos aut lanceolatis ( $1\frac{1}{2}$ -2-pollicaribus) mucrone rigidulo apiculatis, laxa floribunda folia subaequante, floribus fructibusque . Asa Gray has thought that the whole genus might be with *Choisyella*, but, besides the stamens equal in number to and those of the parts of the flower, the small flowers in aately trichotomous panicle give it a very different aspect, and fruit of *Choisyella* is as yet unknown.—G. BENTHAM.

Flower. 2. Stamens, disk, and pistil. 3. Stamens. 4. Ripe carpel, al section, with the base of the wing. 5. Embryo. 6. Flower bud.

## PLATE 1386.

**NIEBUHRIA WOODII, Oliv.**

## CAPPARIDACEÆ.

*Woodii, Oliv. sp. nov.*, glabra, foliis 3-5-foliolatis, foliolis ellipticos lanceolatis acutatis mucronulatis coriaceis venulis prominentibus, floribus in ramis annotinis fasciculatis, pedunculo ovario ellipsoideo v. obovoideo glabro longitudinaliter 4-costato subgloboso.

. Inanda, Natal, *J. M. Wood*, n. 930.

tes 5-8 pedalis, ramis virgatis teretibus cortice lœvi. *Folia* petiolata; petiolis subteretibus 2-4 poll. longis; foliolis 4-7 ongis  $1\frac{1}{2}$ - $2\frac{1}{2}$  poll. latis, lateralibus minoribus, basi plus minus tatis breviter petiolulatis. *Flores* fasciculati v. in racemis sessilibus liformibus dispositi; pedicellis  $\frac{1}{4}$ - $\frac{1}{2}$ -poll. longis; bracteis is subulatis. *Calyx* campanulatus profunde 4-fidus basi obtusus intransus, lobis ovato- v. oblongo-ellipticis obtusiusculis breviteratis. *Petala* 0. *Stamina* circ. 13 in toro parum elevato inserta; atis gracilibus glabris, antheris basifixis ellipsoideis. *Ovarium* stipitatum exsertum, stylo brevissimo deinde incrassato, stigmapeltérico bilobulato; ovula 10-12 vel pauciora. *Fructus* boenus sublævis,  $\frac{1}{2}$  poll. diam.; gynophoro fructifero  $\frac{1}{2}$ - $\frac{3}{4}$  poll. —D. OLIVER.

1. Flower laid open. 2. Calyx, enlarged. 3, 4. Anthers. 5. Ovary and Transverse section of ovary. 7. Fruit and gynophore.

## PLATE 1387.

**SIMARUBA MONOPHYLLA, Oliv.**

SIMARUBACEÆ, Tribe SIMARUBEEÆ.

*S. monophylla*, Oliv. sp. nov. Frutex 1-3 pedalis, glaberrimus, foliis simplicibus oblanceolato-oblongis obtusissimis integerrimis coriaceis levibus brevissime petiolatis, paniculis sepius pedunculatis terminalibus foliis brevioribus, floribus polygamis.

HAB. Kaieteur Savannah, Potaro river, British Guiana, G. & Jenman, Sept. and Oct. 1881.

*Frutex* cortice nigrescente sepe rimoso glaberrimo in ramulis ultimis nitente. *Folia* 1½-3 poll. longa, ½-1¼ poll. lata, coriacea, costa supra leviter depressa, venis inconspicuis; petiolus brevissimus crassiusculus corticatus. *Flores* polygami breviter pedicellati, pedicelli flore æquilongi v. breviores. *Calyx* parvus 4-fidus, lobis deltoides ovatissime acutis. *Petala* 4 oblongo-elliptica minutissime puberula, aestivatione imbricata ½-¾ poll. longa. *Stamina* 8, appendiculata basiliari truncata v. lobulata intus pilosula; filaments glabra subulata; anthers dorso affixa late ellipticas basi profunde bifidae. *Ovarium* glabrum 4-lobatum, in toro breviter elevato impositum; ovula solitaria pendula; stylus ovario 1-2 plo longior apice 4-dentatus.

I leave this plant in *Simaruba* rather than in *Simaba* on the ground of the imbricate aestivation of the corolla. I find, however, in the unifoliolate *Simaba obovata*, Spruce (Engler, in *Mart. Fl. Bras.* xii. par. 2. p. 210), that the aestivation is also imbricate, and I cannot doubt the two plants are congeneric.—D. OLIVER.

Fig. 1. Bud. 2. Expanded flower. 3, 5. Stamens and appendage. 4, 6. Calyx and pistil. 7. Ovule *in situ*.

## PLATE 1388.

**APODOLIRION BUCHANANI, Baker.**

AMARYLLIDACEÆ, Tribe AMARYLLIDEÆ.

*A. Buchanani*, Baker in *Trimen Journ.*, 1875, 75; foliis hysteranthiis, perianthii tubo limbo æquilongo, limbi segmentis oblanceolatis acutis, antheris 3 ad tubi faucem insertis filamentis brevissimis, 3 ad segmentorum unguis adnatis filamentis longioribus.

Barren plains of Natal, *Rev. J. Buchanan.*

*us globosus* 1 poll. diam., tunicis pallidis membranaceis circiter 1-2 poll. longum productis. *Folia ignota.* *Pedunculus brevis-*

*Spatha membranacea cylindrica* 1 poll. longa apice fissa. *thii tubus gracilis cylindricus* 1½-2-pollicaris: limbi segmenta *rubella* 18 lin. longa 2-3 lin. late subtiliter multinervata supra n ad basin sensim attenuata. *Antheræ albidae lanceolatae* 3 lin.

3 ad tubi faucem subsessiles, 3 supra basin segmentorum, filamentis filiformibus antheris subæquilongis. *Stylus fili-* ex tubi fauce breviter exsertus, stigmate capitato, obscure to.—J. G. BAKER.

Flower cut open, shewing segments and upper half of tube, *nat. size.*  
era. 3. Stigma and upper part of style, *enlarged.*

## PLATE 1389.

LEONTOCHIR OVALLEI, *Phil.*

## AMARYLLIDÆ, Tribe ALSTRÆMERIÆ.

Ovallei, *Philippi*, *Descr. Nuev. Pl. ii.* (1873), 69, single species.

B. Chili, rather common about El Huasco, Carrizal and other of the province of Atacames, where it is known by the name of *de Leon* (Lion's paw), whence the generic name, *Philippi*, T. King; Conception, Bridges, n. 1377.

ibid radicales fasciculatæ, irregulariter tuberosæ. *Caulis* tustus, subflexuosus, simplex, sub-2-pedalis, undique foliatus, uti tota glaber. *Folia* sparsa, quaquaversa, approximate, patentia v. exa, oblongo-lanceolata, acuminata, basi in petiolum brevissimum um contracta, majora 3-4-pollicaria, superiora gradatim minora, ma interdum ad squamas breves redacta. *Umbella* terminalis, in capitulum condensata, floribus in receptaculo crassiusculo 30 breviter pedicellatis v. interioribus sessilibus, bracteis parvis ensis. *Perianthii* segmenta 6, subæqualia, persistentia, usque ad ium discreta sed cum glandula epigyna parum prominente cona, spathulata, ¼ poll. longa, in unguem longiusculum erectum tracta, lamina lata erecto-patente. *Stamina* 6, glandulæ epigynæ a, segmentis opposita iisque triente breviora, filamentis filiformis alternis paullo latioribus. *Stylus* subulatus, stigmatibus 3 ibus patentibus. *Ovarium* inferum, 1-loculare, placentis 3 parie-

talibus. *Ovula numerosa*, 2-seriata. *Capsula coriacea*, triquetro-turbinata, 4-5 lin. longa et lata, apice breviter connata et reliquias glandulæ epigynæ sub segmentis persistentibus annulata, demum in valvas 3 medio placentiferas dehiscentes. *Semina parva*, subglobosa, testa appressa; embryo in albumine duriusculo parvus.

The genus is closely allied to *Bomarea*, but is well distinguished by the dense inflorescence, the shape of the perianth segments (said by Philippi to be fleshy) and especially by the one-celled ovary and capsule.—G. BENTHAM.

Fig. 1. Flower. 2. Ovary and style. 3. Ovary, transverse section. 4. Capsule. 5. Seed. 6. Vertical section of the seed, showing the embryo.

### PLATE 1390.

#### **COLA NATALENSIS, Oliv.**

#### STERCULIACEÆ, Tribe STERCULIEÆ.

**C. Natalensis, Oliv. sp. nov.**, foliis integris oblongo-ob lanceolatis obtuse acuminatis basi angustatis sepe obtusis longe petiolatis, floribus ♂ axillaribus pedicellatis fasciculatis v. solitariis, calyce 5-(6-) partite v. profunde lobato lobis oblongo-ellipticis extus et intus apicem versus stellato-hirsutis, androphoro glabro calyce breviore, anthers annulatum capitatis loculis parallelis uniseriatis: fl. ♀ carpellis dense hirsutis, stylis apice recurvis stigmate papilloso antice leviter decurrente; carpellis fructiferis obovoideis basi breviter angustatis breviter cinnamomeo-tomentosis.

HAB. Inanda, Natal, J. M. Wood, n. 321.

*Arbor*; ramulis teretibus glabris. *Folia* 3½-7 poll. longa ¼-2 poll. lata, costa venisque subtus prominulis: petiolus ½-2 poll. longus apice leviter incrassatus. *Flores* ½-¾ poll. diametro. *Carpella* fructiferis 4-5, ¾-1 poll. longa, ¾-¾ poll. lata.

Allied to two or three species, occurring in tropical Africa, but with good specific distinctions. It differs from the common Kola Nut, *C. acuminata*, in the uniseriate parallel anther-cells. It is another of the interesting discoveries made by Mr. Wood in Natal.—D. OLIVER.

Fig. 1. Stamine flower. 2. Androphore and anthers. 3. Detached anthers. 4. Pistillate flower. 5. Pistil. 6. Three carpels of fruit.

## PLATE 1391.

*PETERMANNIA CIRROSA*, *F. Muell.*

DIOSCOREACEIS AFFINIS.

*P. cirrosa*, *F. Muell.* in *Benth. Fl. Austral.*, vi. 462, single species.HAB. Australia, Macleay river, New South Wales, *C. Moore*; Clarence river, *Beckler*.

*Caules scandentes*, 15–20-pedales, ramosi, obtusanguli, aculeolis minimis s<sup>e</sup>p<sup>e</sup>e scabri. *Folia oblongo-lanceolata* v. *ovato-lanceolata*, 2–4-pollicaria, acuminate, basi cuneata, petiolo brevi interdum torto, rigidule membranacea, scabriuscula, venis primariis plurimis subtus elevatis basi cum costa plus minus confluentibus. *Panicula* v. *cymulæ laxæ*, pauciflora, breviter pedunculata, foliis oppositæ iisque s<sup>e</sup>p<sup>e</sup>ius breviores, inferiores s<sup>e</sup>p<sup>e</sup>e steriles in cirros tortuosos ramosos mutatos. *Pedicelli* secus ramulos inflorescentia solitaris v. geminæ, recurvæ, 1–3-lineares. *Bractæ* primariae parvæ, adnatae, bracteolæ minimæ. *Flores* hermaphroditi. *Perianthium* supra ovarium fere ad basin 6-partitum, segmentis oblongis petaloideis patentibus reflexis subsequalibus v. anterioribus vix angustioribus ad 2 lin. longis. *Stamina* 6, basi perianthii affixa, filamentis erectis brevibus, anthers oblongæ, erectæ, loculis extrorsum dehiscentibus. *Ovarium* inferum, ovoideum, 1-loculare, placentis 3 parietalibus; stylus tenuiter columnaris, stigmate capitato, ovula in quaque placenta plurima, 2-seriata (*anatropa*?). *Fructus* (vix maturus) baccatus, 2 lin. diametro. *Semina* plurima.

The excellent flowering specimens received from Mr. Moore, of Sydney, since the publication of the sixth volume of 'Flora Australiensis,' have enabled me to complete the generic character, but the natural order to which the plant should be referred remains very doubtful. The habit is rather that of *Smilaceæ*, with the inferior ovary of *Dioscoreaceæ*, and the unilocular ovary with parietal placentation is anomalous in both orders.—G. BENTHAM.

Fig. 1. Flower-bud. 2. Open flower. 3. Stamens. 4. Style. 5. Ovary, transverse section.

## PLATE 1392.

## RAJANIA HASTATA, Linn.

## DIOSCOREACEÆ.

*R. hastata*, Linn. Spec. Pl. 1461, foliis hastatis v. triangulari-latis, floribus masculis subsessilibus, samaris parvulis.—Plum. D Pl. Amer., i. 98.

HAB. West Indies, San Domingo, Plumier; Cuba, Poe Wright, n. 1712, and apparently the same, Bahamas, L. Brace.

*Glabra*, dioica. *Caulis* tenuis, alte volubilis. *Folia* variant, anguste hastata 1-1½-pollicaria, nunc late hastato-deltoidea 3-4 caria, 5-7-nervia. *Racemi* utriusque sexus axillares, tenues, 1 pollicares, simplices v. parce ramosi, solitarii v. 2-3-fasciculi masculi fere a basi floribundi, floribus subconfertis brevissime cellatis v. sessilibus; *feminei* longiores floribus distinctius cellatis. Fl. ♂ : *Perianthium* late campanulatum, expansum 1 diametro, ad medium 6-fidum. *Stamina* 6, subequalia, tubo lobos affixa iisque multo breviora. *Pistilli* rudimentum in ♂ floris pulvinatum. Fl. ♀ : *Perianthium* supra ovarium minus, 6-partitus, persistens. *Staminodia* 0 v. minuta. *S* breviter columnaris, apice in stigmata 3 2-fida patentia div. *Samara* cum ala oblique ovata, 5-7 lin. longa, 2-3 lin. lata, uno h prope basin carpellorum abortivorum rudimentis quasi articu. *Semen* (*Dioscoreæ*) planum, latum; *embryo* parvus inter albuminas arcte inclusus, a hilo parum remotus.

Three species of *Rajania* have been well figured by Plumier a the general outline, but the details of structure have never been represented. The male flowers are precisely those of the typical fit of *Dioscorea*, and from male specimens alone two or three Brute *Dioscoreas* have been published as *Rajanias*. This genus app to be strictly limited to the West Indian Islands.—G. BENTHAM.

Fig. 1. Male flower. 2. The same opened out. 3. Stamens. 4. Female & 5. Style. 6. Fruit (samara). 7. Seed. 8. The same, longitudinal section, showing one lamina of the albumen and the embryo.

## PLATE 1393.

## SOYAXIA GABONENSIS, Oliv.

## PASSIFLORACEÆ.

*Soyauxia*, Oliv. gen. nov. *Flores* hermaphroditi, spicati. *Calyx* brevissimo ovarium arcte cingente, limbo 5-partito patente, lobis idatis obtusis concavis. *Petala* 5 perigyna obovata calyce paullo ora. *Stamina* numerosissima libera perigyna calycis fance ta; filamenta filiformia; antheræ rotundato-quadratæ 4-locellatæ. *Stigma* disciformis brevissima tubo calycis inserta fance ejusdem oræ superans truncata subintegra. *Ovarium* liberum hirsutum datum 1-loculare; ovula 6 ( $3 \times 2$ ) pendula. *Styli* 3, a basi liberi ramos divergentes; stigmata minuta. *Fructus* 0.—*Arbor* 15–17 ped. alterna oblongo-elliptica acuminata breviter petiolata, stipulata. *Br. axillares* sèpius geminatae folio breviores 8–15-floræ, ferrugineo-hirtæ.

*gabonensis*, Oliv., sp. unica.

AB. Gaboon, H. Soyaux, n. 48, 1879.

rami subteretes ferrugineo-hirtelli v. pilosuli. *Folia* 3½–5½ poll. lata, integerrima membranacea supra glabrescens et pilosula v. pubescens costa venulisque secundariis conspicuis: latus  $\frac{1}{2}$  poll. longus: stipulas caducæ. *Spicæ* floriferæ 2½–3 poll. et pilosulae. *Flores* subsessiles; bractæ caducæ; calyx extus sericeo-hirsutus; petala dense sericea.

ruit I have not seen. This interesting novelty belongs to a group of *Passifloraceæ* almost confined to West Tropical Africa, and I suppose may be regarded as connecting these with *Samydaceæ* through *Dioscorenia*.

Ions. Soyaux, now settled in the Gaboon, well deserves that his name should be associated with one of his interesting discoveries in this region. If he can supply fruiting specimens to his Berlin correspondents, who most liberally allow us to share his collections, would enable us to complete the description of *Soyauxia*.—OLIVER.

fig. 1. Flower, from above, after removal of petals and stamens. 2. Calyx-tube. 3. Petal, back of. 4. Anther, back and front. 5. Transverse section of ovary, showing 5 of the ovules suspended in its cavity. 6. Longitudinal section of ovary; the remaining.

## PLATE 1394.

**EPALLAGE DENTATA, DC.**

COMPOSITE, Tribe HELIANTHOIDEA, Sub-tribe VERBESINAE

*E. dentata*, DC. Prod. vi. 4, herbacea, caule erecto ramoso —  
cente, foliis alternis petiolatis ovato-deltoides lanceolatisve in  
liter et sepe grosse dentatis acutiusculis, basi late cuneatis truncatis  
involucri squamis ovali-oblongis hirtis acutis interioribus  
longioribus.

HAB. Madagascar, central region. Received recently from  
E. Baron and Dr. G. W. Parker.

*Herba annua* sepius ramosa 1—2 pedalis, interdum depauperata  
subsimplice  $\frac{1}{2}$ — $\frac{1}{3}$  ped. *Folia* sparse villosula, lamina  $\frac{3}{4}$ —1 poll. ■  
petiolus  $\frac{1}{4}$ — $\frac{1}{2}$  poll. longus. *Capitula* hemisphaerica  $\frac{1}{2}$ — $\frac{1}{3}$  poll.  
pedunculata cymosa laxe paniculata; involucrum hirtum, sq.  
pauci-seriatis; receptaculum paleis oblongis oblanceolatisve acum.  
utrinque dentatis v. incisis. *Corolla* ligulatae flavæ lamina of.  
v. elliptica, interdum parva inconspicua, disci tubus parce gland.  
basi breviter ampliatus. *Antheræ* basi bidentatae. *Achæna*  
angustata, costis primariis 5, appresse setulosa; pappus aristis  
cum squamellis intermediis incisis.—D. OLIVE.

Fig. 1. Ray floret. 2. Scale of receptacle. 3. Disc floret. 4. Anther. ■  
branches. 6. Achene.

## PLATE 1395.

**RHIPOGONUM SCANDENS, Forst.**

## SMILACEÆ.

*R. scandens*, Forst., Poir. Dict. vi. 212, floribus paniculatis, p.  
anthii segmentis quam stamna multo brevioribus, stylo vix ov.  
breviore, ovarii loculis (an semper?) 2-ovulatis.—A. DC. Monogr. i. 2  
Hook. f. Handb. N. Zeal. Fl. 281.

HAB. New Zealand; northern and middle islands abundant, J.  
Hooker and others; Chatham Island, F. Mueller.

*Coulio* alte scandens, ramosus, lœvis v. demum scabriusculus, uti  
planta glaber. *Folia* opposita v. rarissime cujusve paris inter se  
parum distantia, ovali-oblonga, obtusa acutiuscula v. brevissime  
acuminata, 2-4-pollicaria, rigidula, 5-nervia v. nervis lateralibus vix  
conspicui marginalibus sub-3-nervia, venulis transversis plus minus  
distinctis reticulata, petiolo 1-3 lin. longo medium versus rumpente.  
*Squame* ad basin ramulorum breves, rotundatæ. *Paniculae* in axillis  
foliorum superiorum pedunculatæ v. ramulum basi panicoliatum  
scillarum terminantes, parum ramosæ, laxæ, floribus parvis pedicellatis.  
*Testiculae* cum filamentis brevissimis fere 2 lin. longæ, perianthium  
minimum fere occultantes. *Ovari* loculos in speciminiibus examinatis  
super 2-ovulatos inveni, ovulis collateralibus, ex Brownio tamen  
inque 1-ovulati sunt, verisimiliter ut in *Smilacibus* nonnullis  
sunt. *Baccæ* globosæ, rubræ, nitidas, in sicco 4-5 lin. diametro  
spermæ. *Embryo* parvus in albumine duro.

Neither Professor Oliver or myself have examined the ovaries of  
several specimens gathered by various collectors, and have never  
seen the ovules solitary in the cells as described by Brown, Hooker,  
de Candolle, and others, and as they certainly are in the other  
species of the genus.—G. BENTHAM.

1. Flower. 2. Stamens. 3. Perianth and pistil. 4. Ovary, vertical section.  
5. Same, transverse section. 6. Seed. 7. The same, vertical section, showing the  
embryo.

## PLATE 1396.

## RHIPOGONUM ELSEYANUM, F. Muell.

## SMILACEÆ.

1. *Elseyanum*, F. Muell. *Fragm. Phyt. Austral.* i. 44, floribus in  
simplici subsessilibus dissitis, staminibus perianthio brevioribus,  
brevissimo, ovario villoso loculis 1-ovulatis.—*Benth. Fl. Austral.*  
10; *A. DC. Monogr.* i. 216.

2. New South Wales; Archer's Station, *Leichhardt*; New Eng.  
*O. Stuart*; Richmond river, *Henderson*.

3. *validus*, alte scandens, uti inflorescentiæ rhachis et foliorum  
primariæ pube ferruginea plus minus conspersus v. obtectus.  
opposita, ovato- v. elliptico-oblonga, brevissime acuminata,  
a, 3-5-tupli-nervia, venulis transversis reticulata, petiolo brevis-  
ub lamina rumpente. *Spicas* axillares, 3-5-pollicares. *Flores*

sigillatim v. per 2-3 dissiti, subsessiles. *Perianthii* segmenta supra oblonga, patentia, ad 3 lin. longa. *Stamina* triente v. fere breviora, filamentis brevissimis. *Ovarium* laxe villosum, stigma 3 sessilibus recurvis; ovula in quoque loculo semper 2 evidentur, lateraliter medifixa. *Fructus* adhuc ignotus.

In all the species of *Rhipogonum* I find the ovules laterally about the middle and amphitropous, not pendulous and orthotropous as in *Smilax*, and as given in the general character of the order. The etymology of the generic name was given by Forster himself (*Nom. Gen.* 50), not first indicated by Hooker, as supposed by A. D. C. Candolle.—G. BENTHAM.

Fig. 1. Flower. 2. Stamens. 3. Pistil. 4. Ovary, transverse section. 5. The same, vertical section.

## PLATES 1397, 1398.

### DIOSCOREA BUCHANANI, Benth.

#### DIOSCOREACEÆ.

**D. Buchananii**, *Benth. sp. nov.*, foliis alternis late ovato-triangularibus late subcordatis integris v. utrinque basi lobo brevi rotundato axillis 7-nervibus, racemis axillaribus simplicibus, masculis brevibus denique, perianthio subherbaceo lobis acutis, staminibus 6, foemineis elongatis dissipitifloris, capsulis (cum alis) obovatis, seminibus orbiculatis ab undique circumdatis.

HAB. Tropical Africa, Shiré Highlands, Zambesia, Buchanan.

*Dioica*, alte volubilis, glabra. *Folia* membranacea, 2-5 poll. longa, basi 1½-3 poll. lata, apice subacumine brevi rotundata, auriculis basilibus rotundatis, membranacea, venulis inter venas transversis subreticulatis, petiolo 1-1½ pollicari basi sepinis torto. Fl. ♂: *Racemi* 1½-2 pollicares, a basi densiflori, pedicellis 1-1½ lin. longis minute bracteolatis. *Perianthium* quam in omni genere majus, campanulatum, fere ad basin 6-fidum, lobis lato-lanceolatis acutis fere 3 lin. longis (ex sicco) tenuiter herbaceis insigniter purpureo-maculatis. *Stamina* 6, prope basin segmentorum affixa iisque paullo breviora; anthers ovatae, dorsifixa. *Pistilli* rudimentum 0. Fl. ♀: *Racemi* sub anthesi 3-4 pollicares, floribus sessilibus dissipitis. *Perianthium* supra ovarium 6-partitus, segmentis angustis acutis ad 2 lin. longis. *Staminodia* minuta. *Ovarium* lineare, 3-4 lin. longum, 3-loculare, ovulis in quoque loculo 2 superpositis pendulis. *Stylus* columnaris, stigmatibus 3 brevibus

*recursus apice papillosis. Capsula omnino Dioscorearum typicarum, l. 1-1 $\frac{1}{2}$  poll. longa, vix 1 poll. lata. Semen cum ala late ovale, 6-8 lin. longum, 4-5 lin. latum, albumine 2-lamellato et embryone omnino generis.*

The male perianths are at least twice as large as those of any species known to me, the female flowers and fruits are like those of several others.—G. BENTHAM.

Plate 1397: Male specimen. Fig. 1. Flower. 2. Stamens. Plate 1398: Female specimen. Fig. 1. Flower. 2. The same, longitudinal section. 3. Style. 4. Seed. 5. The same, longitudinal section, showing one lamina of the albumen and the embryo.

### PLATE 1399.

#### INULA SHIRENSIS, Oliv.

COMPOSITES, Tribe INULOIDEA.

*I. shirensis, Oliv. sp. nov., herbacea erecta, caule fere a basi simpliciter patentim hirsuto-piloso v. glabratu, foliis inferioribus amplis longe petiolatis ellipticis v. oblongo-ellipticis superne gradatim minoribus sessilibus pilosis, capitulis heterogamis majusculis pedunculatis in cymis 3-5-cephalis terminalibus dispositis, involucris dense flavidopilosis squamis exterioribus herbaceis ovato-lanceolatis acuminatis, interioribus linearibus acuminatis, acheniis glabris longitudinaliter striatis, pappo uniseriato.*

HAB. Shiré Highlands, Zambesia.—Mr. Buchanan.

*Caulis 3-5-pedalis teres longitudinaliter striatus plus minus fulvo- v. flavidohirsutus v. pilosus. Folia inferiora 1 $\frac{1}{4}$ -1 $\frac{1}{2}$  ped. longa  $\frac{1}{2}$ - $\frac{2}{3}$  ped. late obtusiuscula basi in petiolum angustata crenato-sinuata utrinque præcipue in venis paginae inferioris hirsuto-pilosa, membranacea; folia superiora lanceolata sessilia subamplexicaulia. Capitula 1 $\frac{1}{2}$ -2 poll. lata, pedunculata, pedunculis bracteatis dense pilosis, bracteis lanceolatis v. ovato-lanceolatis; involucri squamæ pluriseriateæ interiores angustiores longiores laxè imbricatae 1-1 $\frac{1}{2}$  poll. longæ. Receptaculum foveolatum. Flores radii flavi breves lignula trifida; disci anguste cylindrici; antheræ basi cundatæ caudis laxè cellulosis. Achenia (immatura) anguste oblonga circ. 15-costata glabra; pappus uniseriatus, setis 30-34 simplicibus.—D. OLIVER.*

Fig. 1. Capitulum, section. 2. Ray floret. 3. Disk floret. 4. Anther. 5. Style branches. 6. Sets of pappus.

## PLATE 1400.

## NOTOBUXUS NATALENSIS, Oliv.

EUPHORBIACEÆ, Tribe BUXEÆ.

*Notobuxus*, Oliv. gen. novum. Flores monoici, axillares, fasciculati. Fl. ♂: *Perianthium* 4-phylum, segmentis per paria decussatis lateribus cymbiformibus aestivatione exterioribus. *Stamina* 6, 4 per paria segmentis anterioribus posterioribusque antepositis, 2 singulis segmentis lateralibus oppositis; filamenta brevissima; anthers obovato-oblongo-ellipticae, longitudinaliter dehiscentibus. *Ovarium* rudimentum nullum. Fl. ♀: *Perianthium* 4-phylum. *Ovarium* ovoidum glabrum triloculare, ovula geminata pendula; styli 3 divergentes intus longitudinaliter stigmatosi. *Fructus* capsularis loculicide 3-valvis, valvis bicornutis. *Semina* nitida nigra.—*Frutex* glaberrima. *Folia* oppositæ tenuiter coriacea elliptica.

HAB. Inanda, Natal, Mr. J. M. Wood, n. 1857; previously collected without expanded flowers by Mr. T. Cooper (1862): Tongaat, n. 3465.

*N. natalensis*, Oliv. sp. unica.

*Folia* 2-4½ poll. longa, ¼-2 poll. lata, obtusa v. obtusiuscula acuminata, basi in petiolum brevem angustata, integerrima, levia, glabra. *Inflorescentia* fasciculata axillaris petiolum paullo superans; flores ♂ v. cum flore ♀ centrali; bractæ lanceolatæ coriaceæ.

This plant is entirely *Buxus* excepting in the two additional stamens, and total absence of any rudiment of a gynoecium in the male flower, forming thus a transition to the genera *Simmondsia* and *Styloceras*.—D. OLIVER.

Fig. 1. Staminate flower, bud. 2. Same, laid open. 3. Anther, back and front. 4. Pistillate flower and bracts. 5. Vertical section of ovary. 6. Seed and dry arilliform integument.

## PLATE 1360.\*

## SCHEDONNARDUS TEXANUS, Steud.

GRAMINEÆ, Tribe CHLORIDEÆ.

*texanus*, Steud. *Syn. Pl. Glum.* i. 146. *Lepturus paniculatus*,  
Gen. N. Amer. Pl. i. 81.

. North America, from Texas and New Mexico to California  
sward to Illinois, *numerous collectors*.

*texanus* tenue, dense caespitosum, cum panicula  $\frac{1}{2}$ - $1\frac{1}{2}$ -pedali. *Folia* v. ad basin caulis anguste linearia v. fere subulata, flaccida,  
longinclusa striata, lamina sepius 1-2-pollicari, ligula hyalina  
scula sepe lacera. *Caulis* infra inflorescentiam 1-4-pollicaris,  
a paucis lamina brevi terminatis fere obtectus. *Panicula* sepius  
2-3-plo longior, ramis paucis simplicibus longe dissitis tenuibus  
lis 1-3-pollicaribus, primum erectis secundis mox patentissimis  
eralibus. *Spiculae* 1-floræ, tenues, acuminatæ, 1- $1\frac{1}{2}$  lin. longæ,  
rhachis tenuem alternatum sessiles, secundæ, rhachi arcte  
se, exaristatæ. *Rhachilla* brevissima, supra glumas inferiores  
ata, ultra fiorem non producta, flore hermaphrodito. *Glumæ* 2  
res vacuæ, parum inaequales, infra articulationem persistentes,  
æ, membranaceaæ, acuminataæ; florens longior, membranacea,  
a rigidula, mucronulata, paleam angustam breviorem floremque  
item. *Lodiculae* 0. *Stamina* 3. *Styli* distincti, stigmatibus  
sia. *Caryopsis* linearis, gluma paleaque rigidulæ inclusa, libera.  
en Nuttall referred this plant to *Lepturus* he was evidently un-  
ited with the typical European species, and in the endeavour to  
e them with his American plant drew up a generic character  
will not apply to either. His description of the species is, how-  
very accurate. Steudel, meeting with Drummond's Texan speci-  
proposed them as a new genus without any reference to Nuttall's  
own plant. The genus appears to me to be nearer allied to  
*pogon* than to any other.—G. BENTHAM.

1. Portion of the rhachis with the persistent outer glumes of two spikelets.  
ering glume and palea from the upper spikelet. 3, 4. Outer empty glumes.  
ering glume. 6. Palea. 7. Flower. 8. Stamens. 9. Caryopsis.

\* Accidentally omitted above (p. 43).



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Leontochir Ovallei, <i>Phil.</i>	69	1389	<i>Jenkinsii</i> , <i>Benth.</i>	8
Leptochloa Wightiana, <i>Nees</i>	62		<i>Maingayi</i> , <i>Benth.</i>	9
Leptogonium domingense,			Rajania hastata, <i>L.</i>	72
<i>Benth.</i>	14	1320	Randia Buchananii, <i>Oliv.</i>	40
Lepturus paniculatus, <i>Nutt.</i>	79		Rhanterium epapposum, <i>Oliv.</i>	50
Loranthus Atkinsonae, <i>Benth.</i>	13	1319	Rhipogonum Elseyanum, <i>F.M.</i>	75
— curviflorus, <i>Benth.</i>	3	1304	<i>scandens</i> , <i>Forst.</i>	74
— Kirkii, <i>Oliv.</i>	6	1309	Rhynchospora ruppioides,	
— Mannii, <i>Oliv.</i>	2	1303	<i>Benth.</i>	31
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Micronychia madagascariensis, <i>Oliv.</i>	27	1337		
Modecca aculeata, <i>Oliv.</i>	11	1317	Schaffnera gracilis, <i>Benth.</i>	59
Munroa squarrosa, <i>Torr.</i>	54	1372	Schedonardus texanus, <i>St.</i>	79
Musanga Smithii, <i>R. Pr.</i>	4	1306-7	Scyphosyce Manniana, <i>Baill.</i>	20
Nephelochloa orientalis, <i>Boiss.</i>	51	1369	Simaruba monophylla, <i>Oliv.</i>	68
Niebuhria Woodii, <i>Oliv.</i>	67	1386	Soyauxia gabonensis, <i>Oliv.</i>	73
Noronha Broomeana, <i>Horne</i>	48	1365	Stenochloa californica, <i>Nutt.</i>	56
Notobuxus natalensis, <i>Oliv.</i>	78	1400	Stellularia nigricans, <i>Benth.</i>	12
Oxygonum alatum, <i>Rurck.</i>	14	1321		
Penianthus longifolius, <i>Miers.</i>	22	1330	Tecoma Nyassae, <i>Oliv.</i>	37 1
Pentzia pinnatifida, <i>Oliv.</i>	28	1340	Thespesia Danis, <i>Oliv.</i>	26 1
Persea Nammu, <i>Oliv.</i>	10	1316	Trianoptiles capensis, <i>Fenzl.</i>	34 1
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Phacellaria rigidula, <i>Benth.</i>	17	1324		
			Urochlaena pusilla, <i>Nees</i>	46 1
			Vernonia Nyassae, <i>Oliv.</i>	35 1
			— stenocephala, <i>Oliv.</i>	35 1
			Veronica Cheesemanii, <i>Benth.</i>	48 1
			Yoenia japonica, <i>Maxim.</i>	47 1



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*Glossocalyx longicuspis*, Benth.

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Pl. B3C2



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Scale Bar





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*Glossocalyx brevipes*, Benth. ♀

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<i>Vernonia Nyassae</i> , <i>Oliv.</i>			
— <i>stenocephala</i> , <i>Oliv.</i>			
<i>Veronica Cheesemani</i> , <i>Benth.</i>			
<i>Yoania japonica</i> , <i>Maxim.</i>			





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*Loranthus* *Mannii*. Oliv.



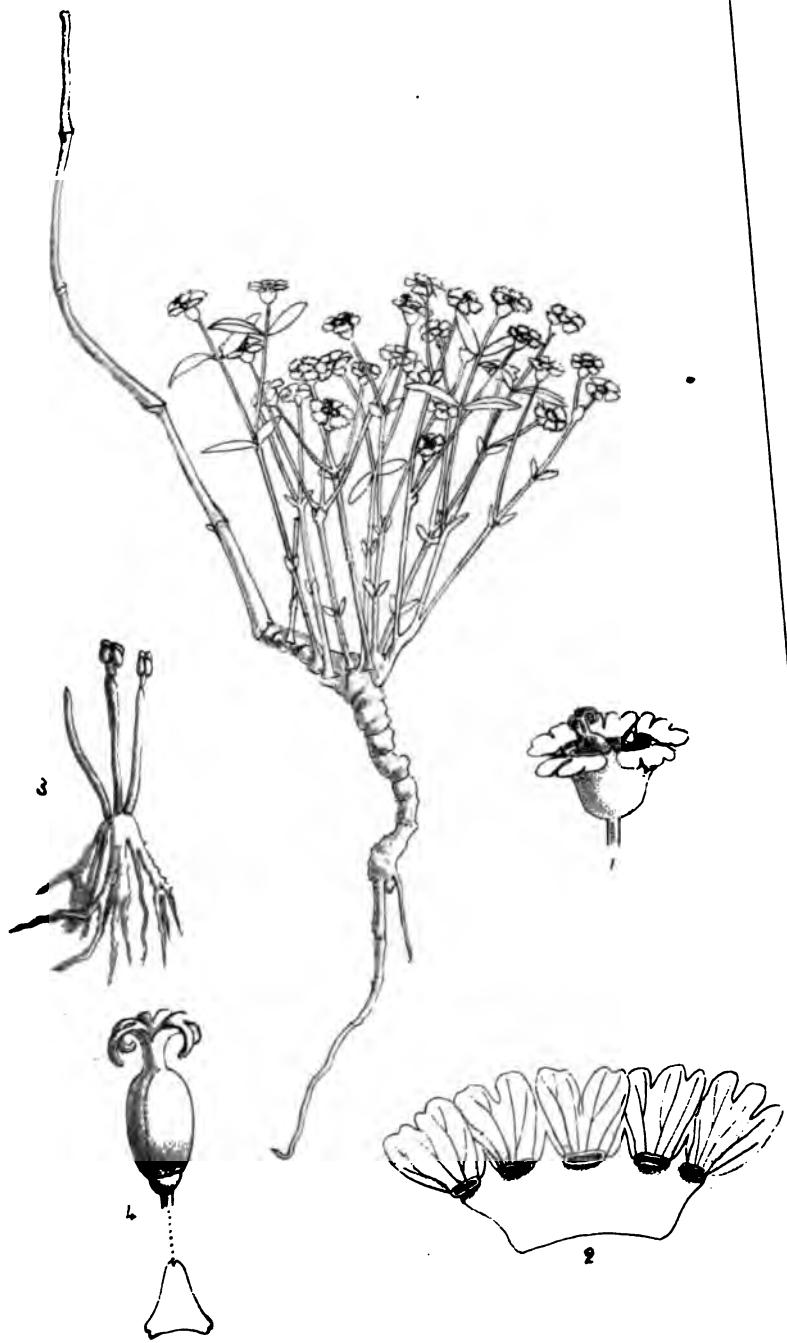


[C.G. del.]

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*Loranthus curviflorus*. Benth.





*Euphorbia zambesiana* Benth.  
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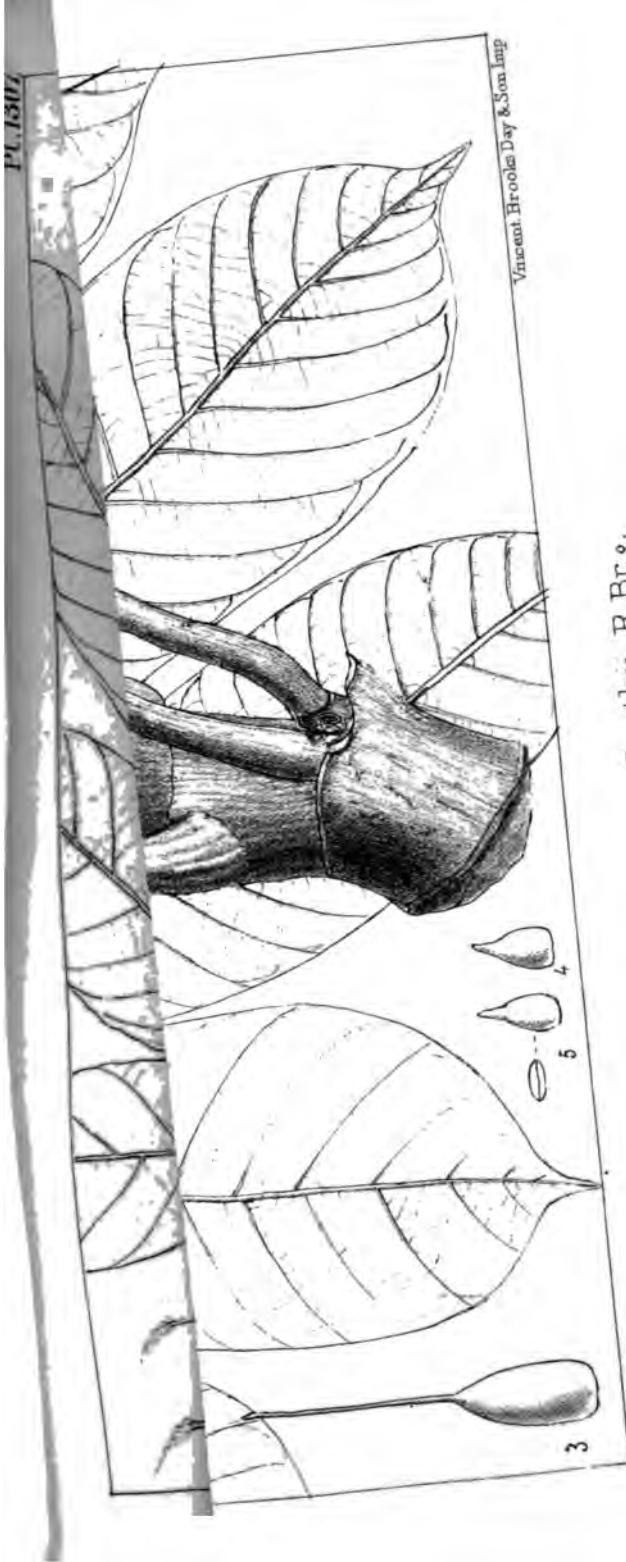




Vincent Brooks Day & Son Inv

2a Smithii R D.





Musanga Smithii, R.Br. f.

A.M.C. del.





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*Ganophyllum falcatum*, Bl





Loranthus Kirkii Oliv.

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AMC 21

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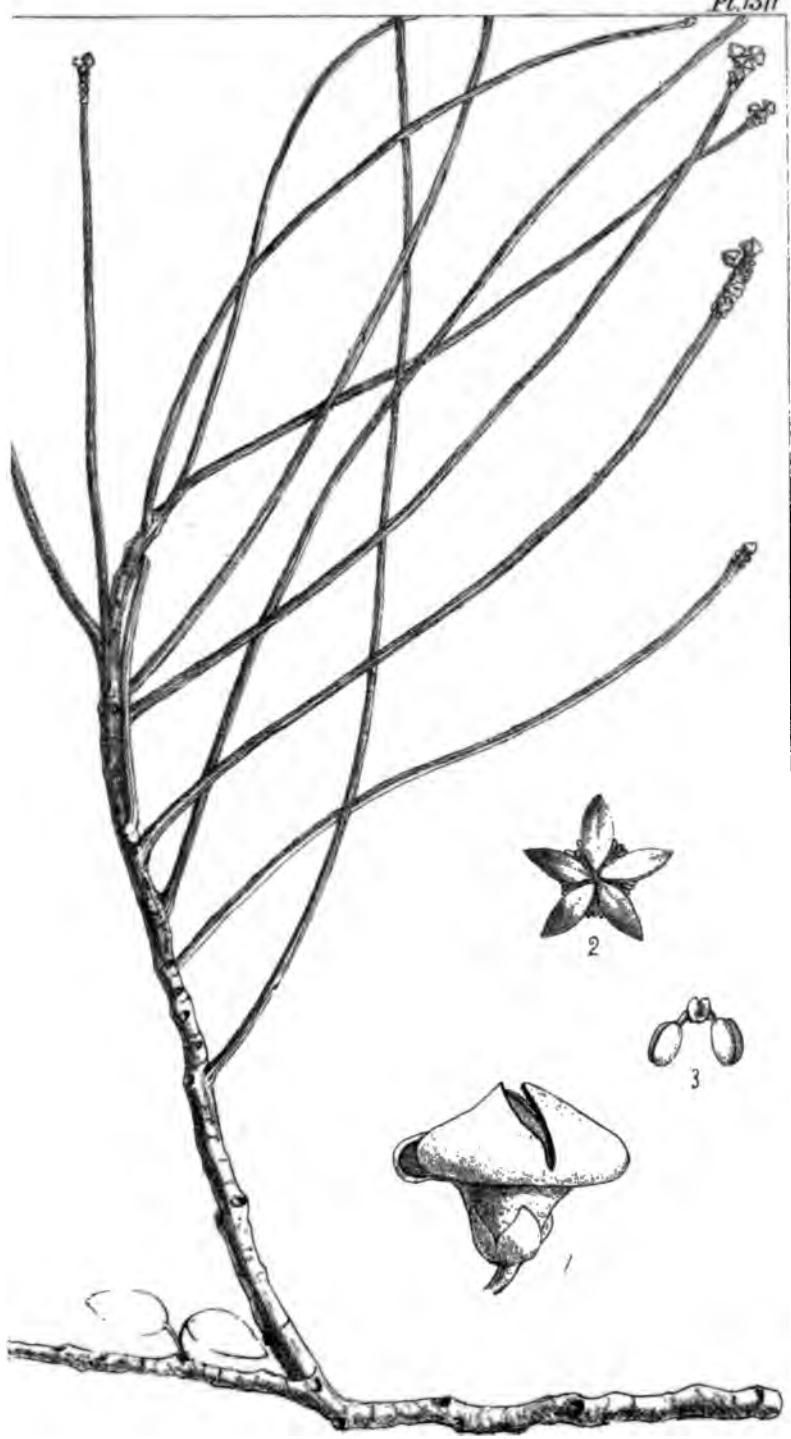


C. del

Vincent Brooks Day & Son Imp

*Farsetia Burtonae Oliv.*





del

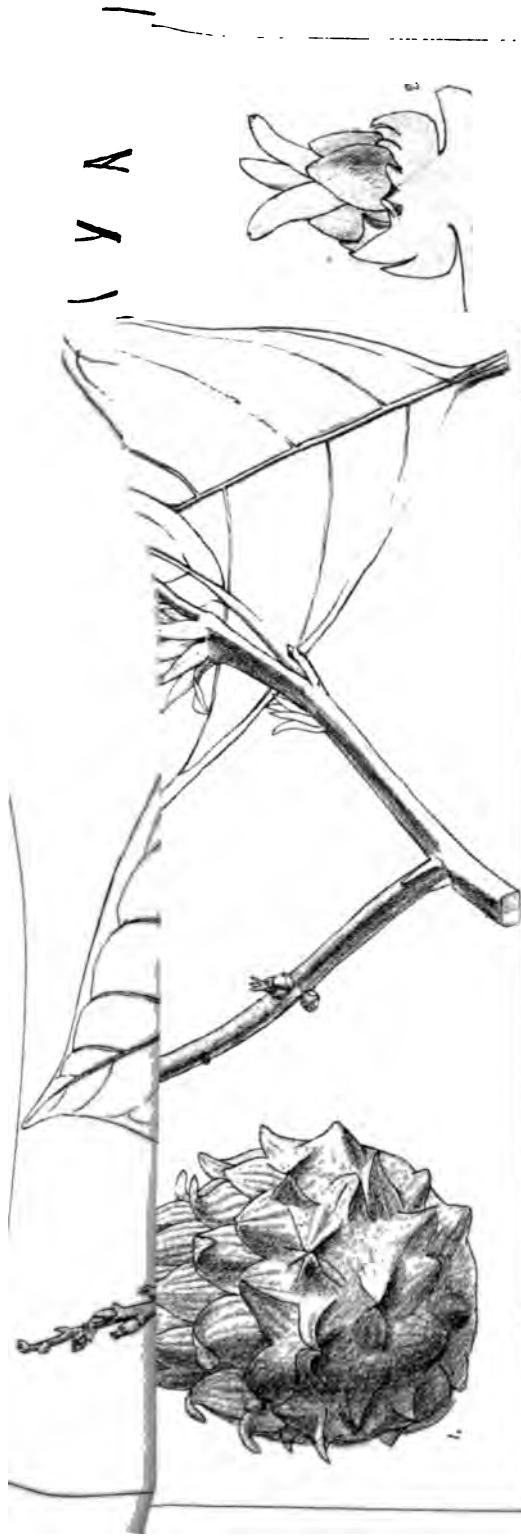
Vincent Brooks Day &amp; Son

*Astrostemma sparrioides*, Benth.



*Quercus Jenkinsii*, Benth.

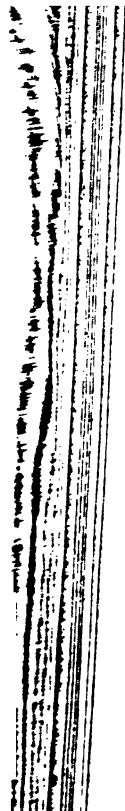
A. M. C. del.

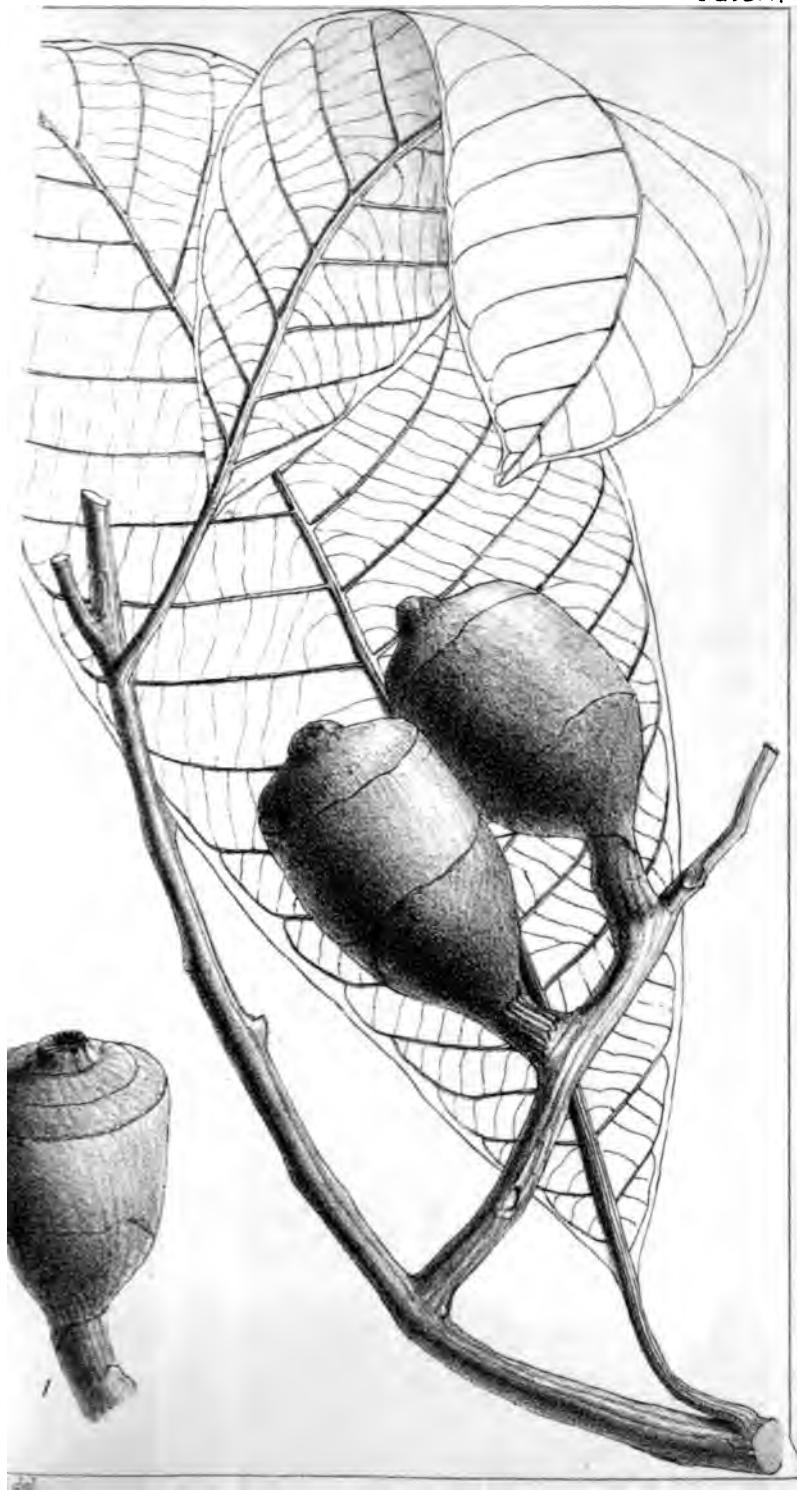






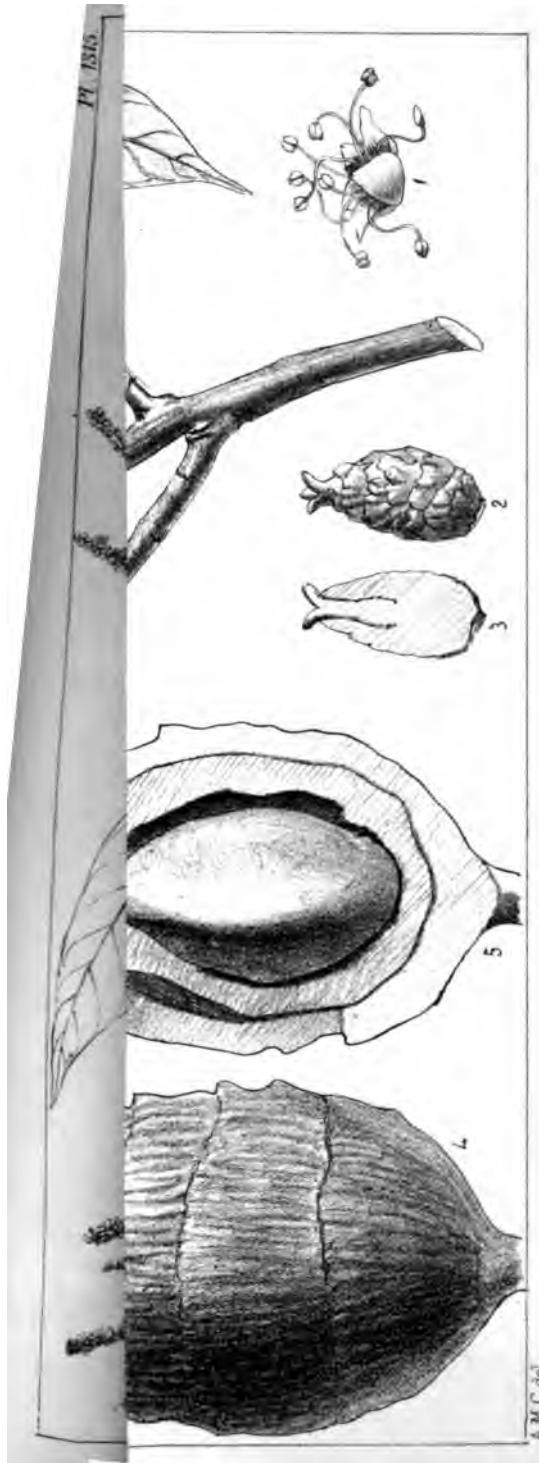
*Quercus Jenkinsii*, Benth.



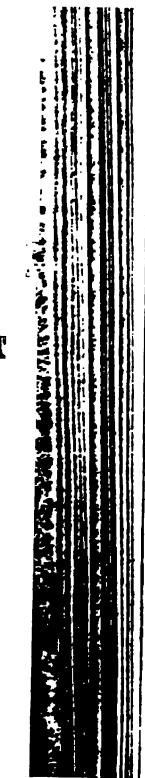


*Quercus Mainiavii* Benth.





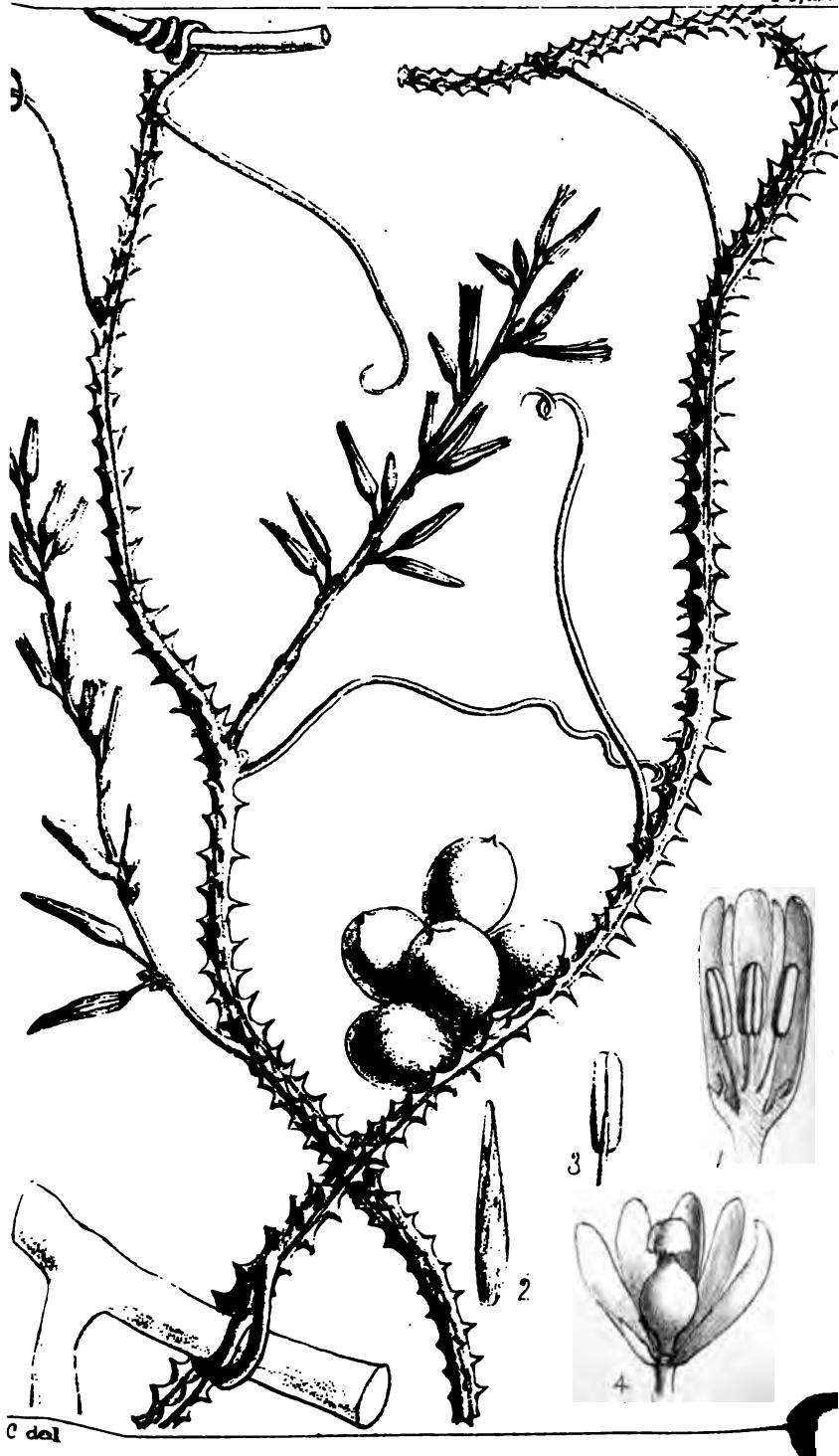
*Quercus Beccariana*, Benth.





*Persea Nanmu*, Oliv.





Modecca aculeata, Oliv.



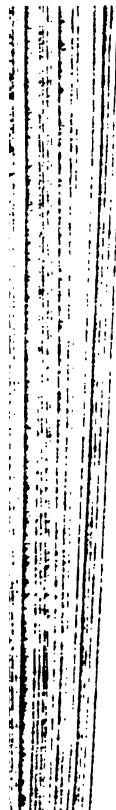


*Stellaria nigricans* Benth.











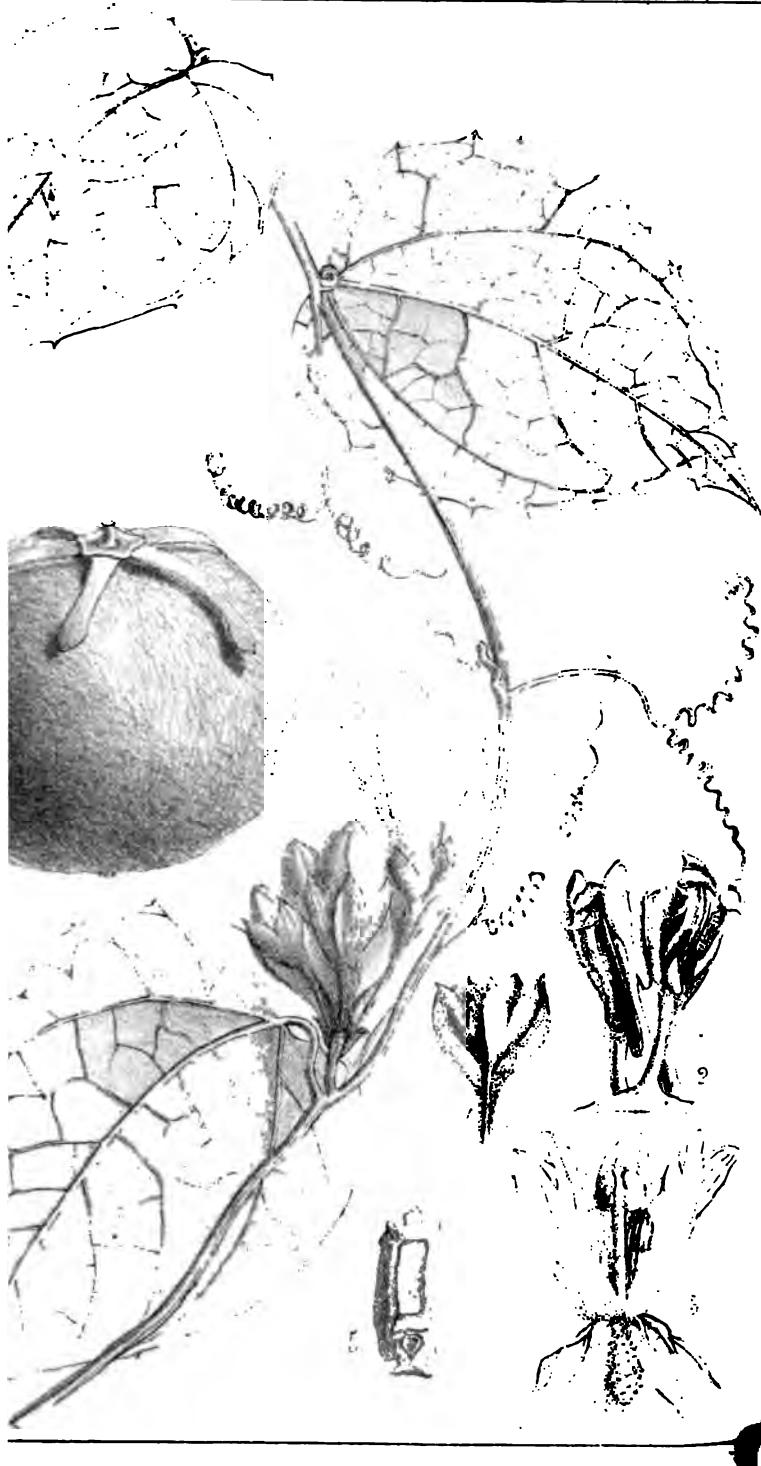
*Leptogonium dominicense* Berth.





*Oxygonum alatum*, Burch.



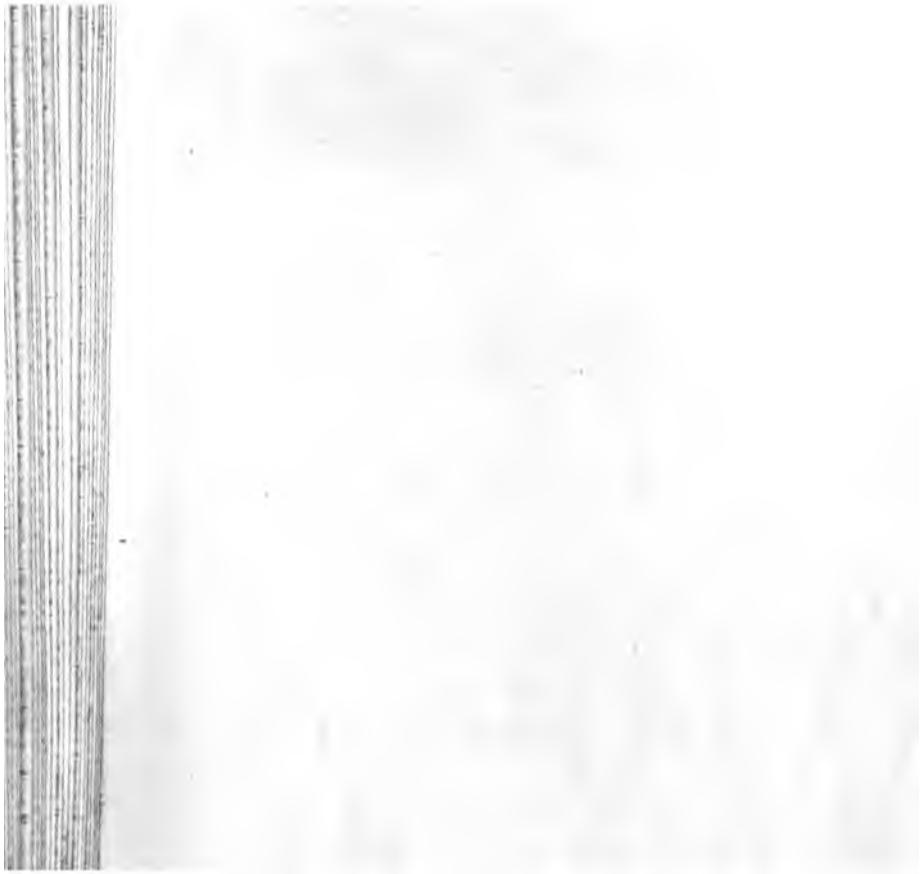


*Dimorphochlamys* Manau. H.W.





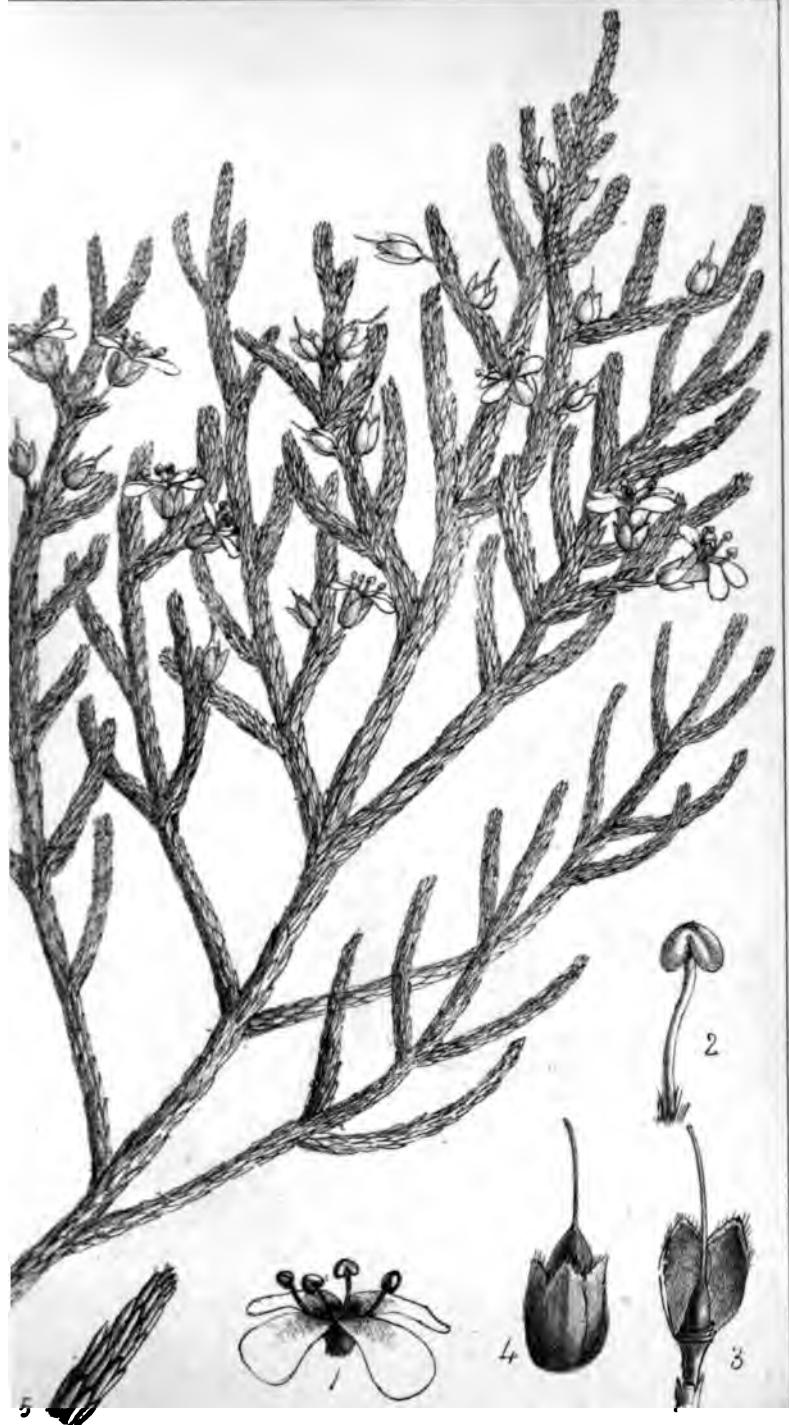
*Abrophyllum ornans*, Hk.f.



1324.







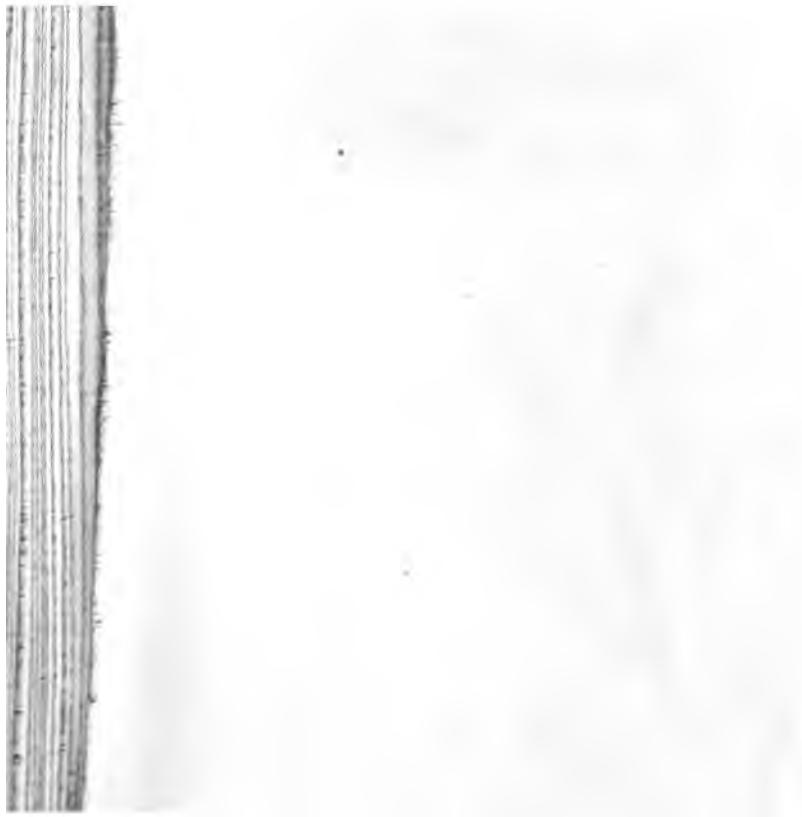
*Aragoa lycopodioides*, Benth.





*Lanessania turbinata*, Baill.

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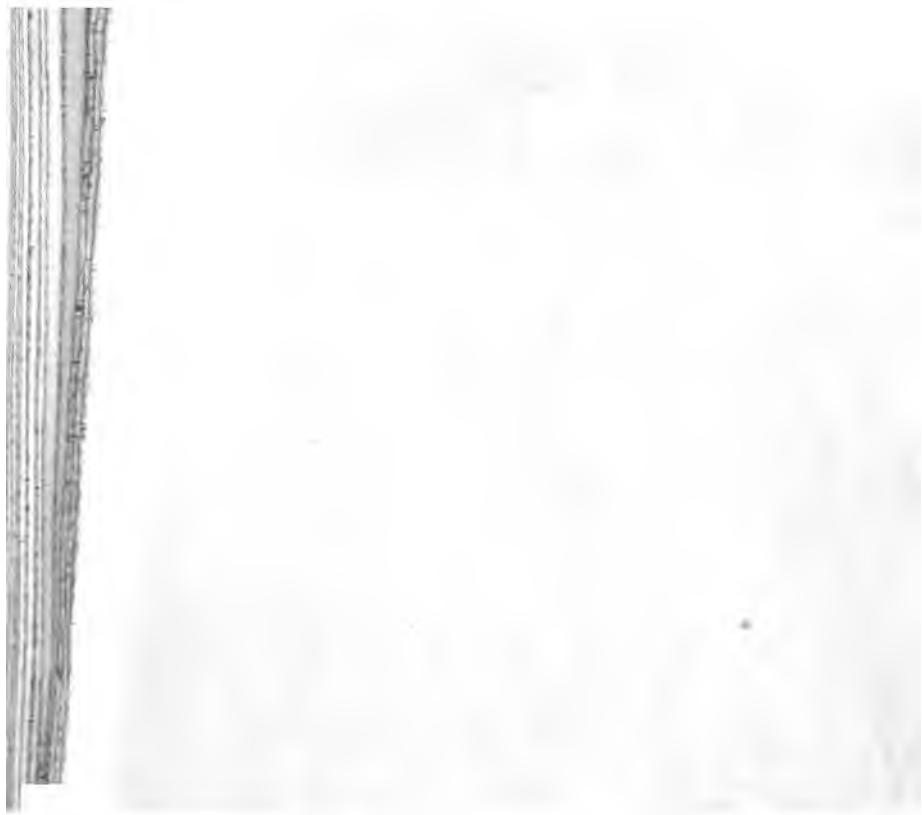
*Scyphosyce Manniana*, Baill.



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*Brunnichia africana*, Welw.





Rosa Ecae, Aitch.





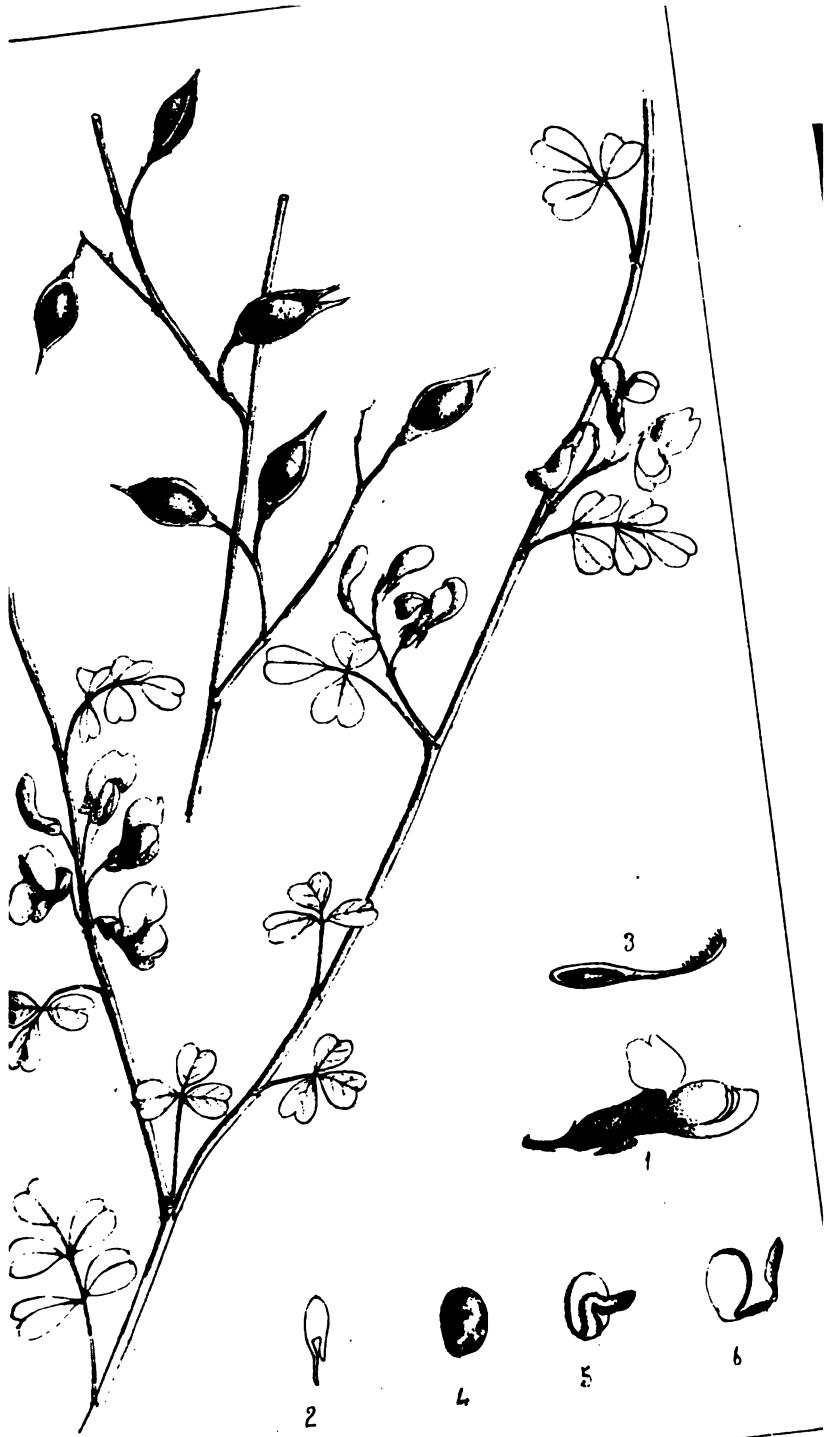
*Penianthus longifolius*, Miers. ♂





*Cephalanthus natalensis*, Oliv.



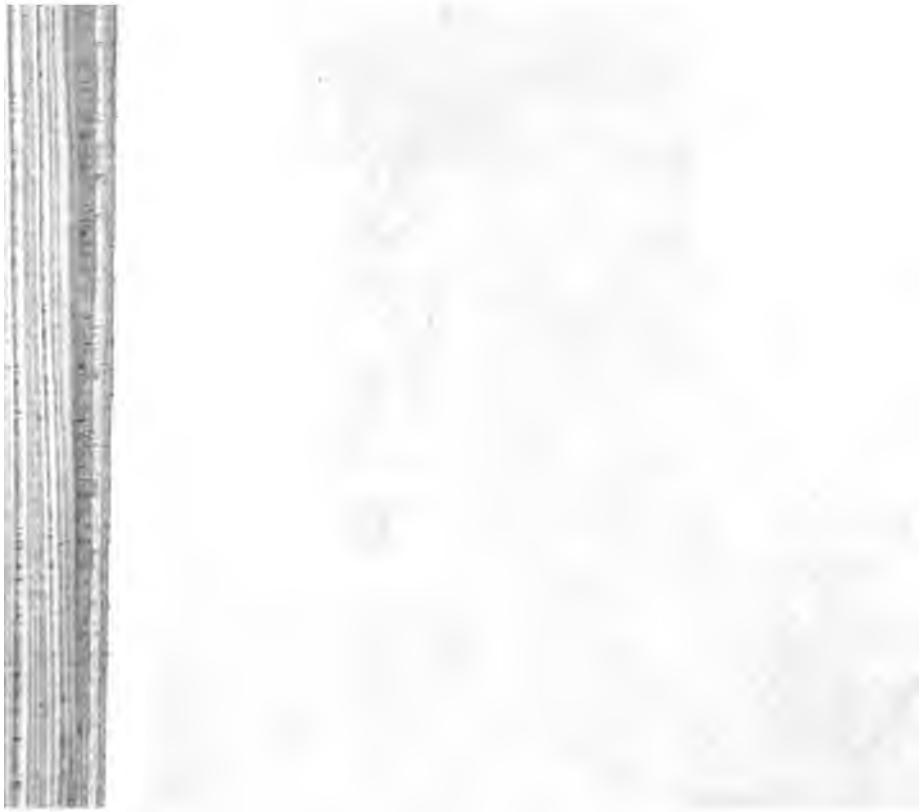


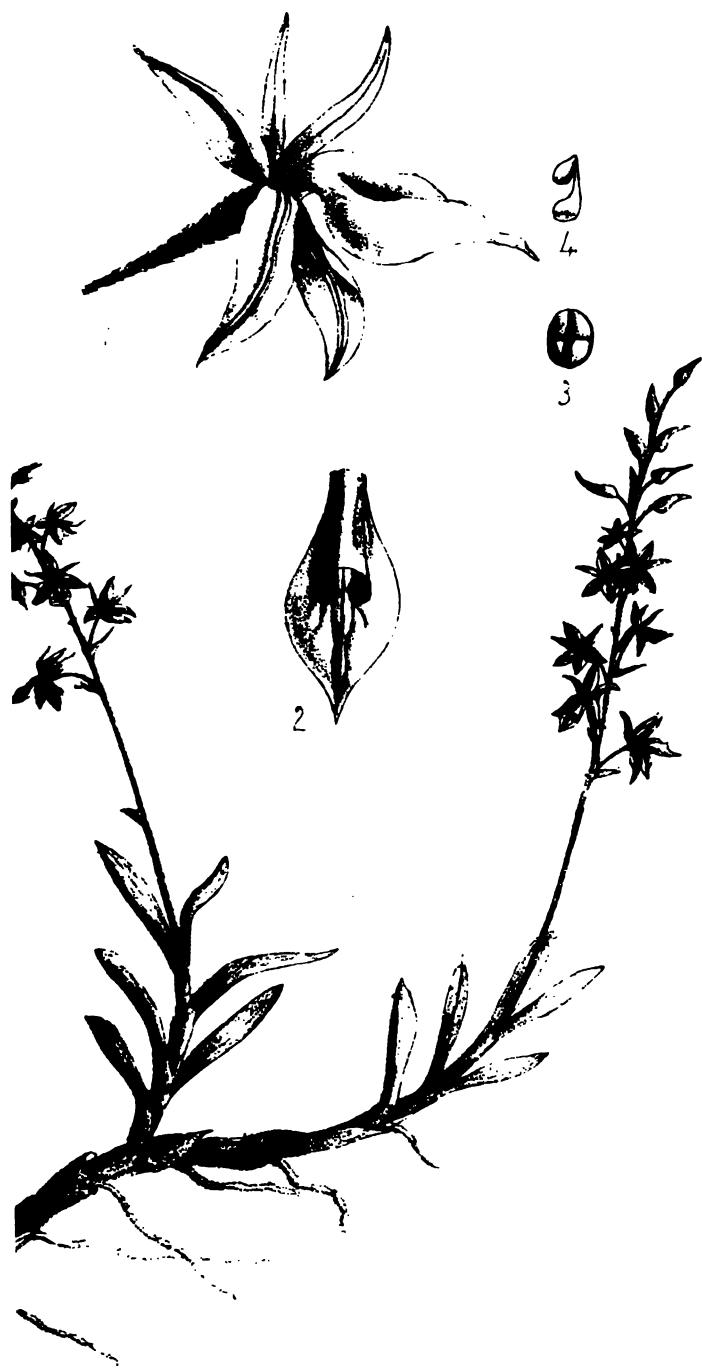
*Carmichaelia Kirkii*, Hk.f.





*Pythrospermum polyandrum*, Oliv.



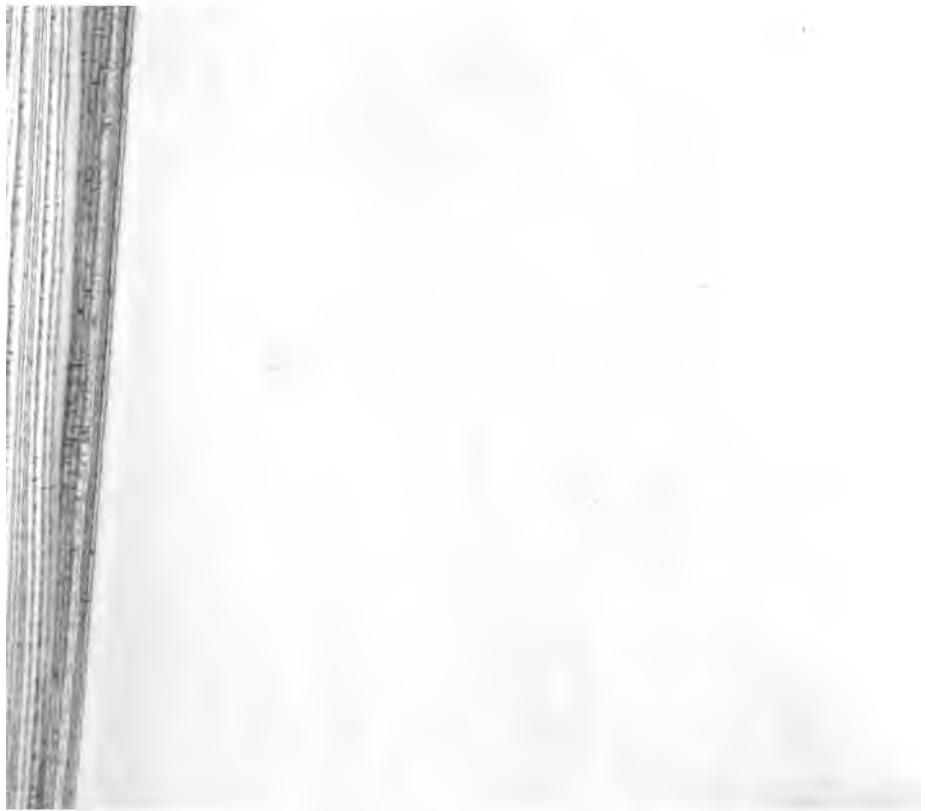


*Lanium microphyllum*, Lindl.





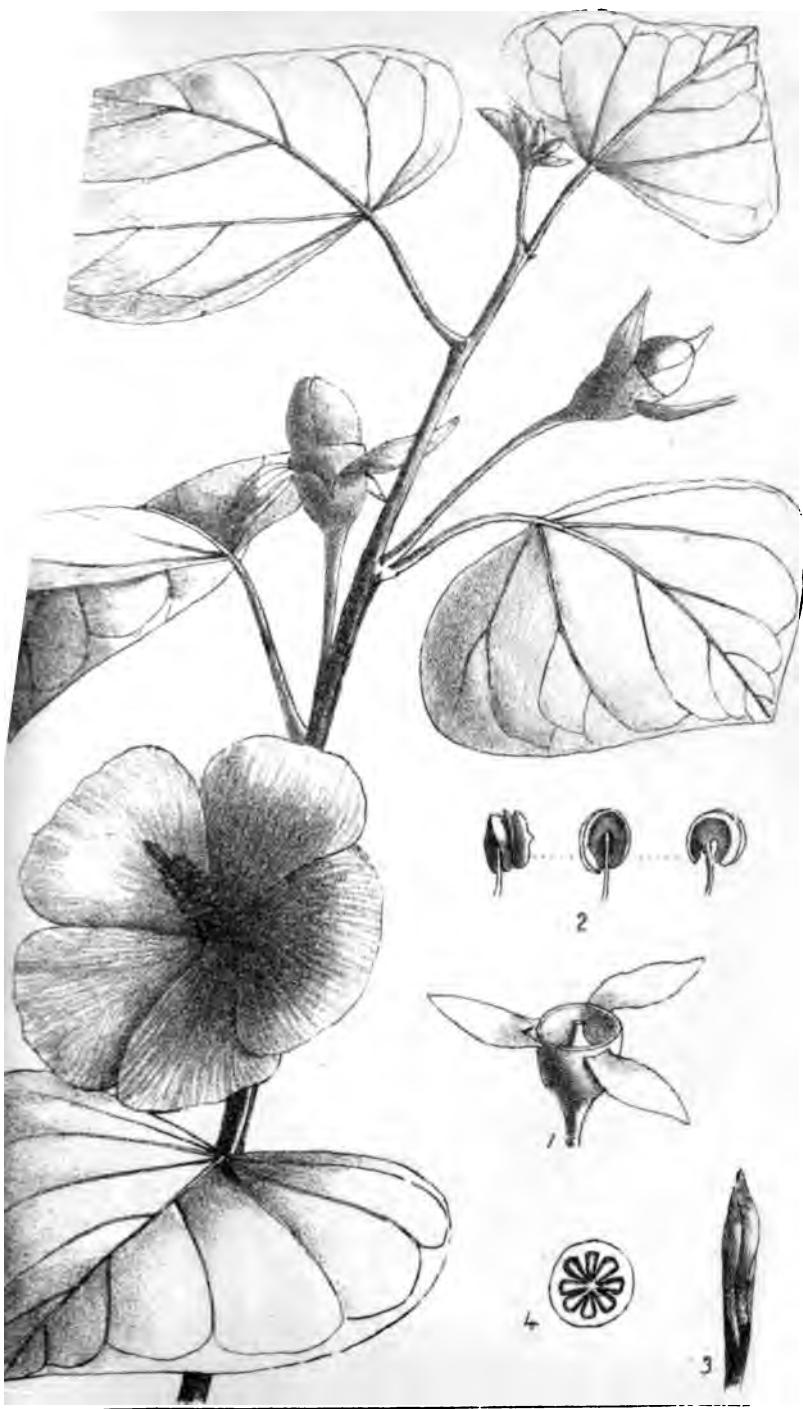
*Lanium Avicula*, Lindl.





Lantana Avicula, Lindl.





Thespesia Danis, Oliv.



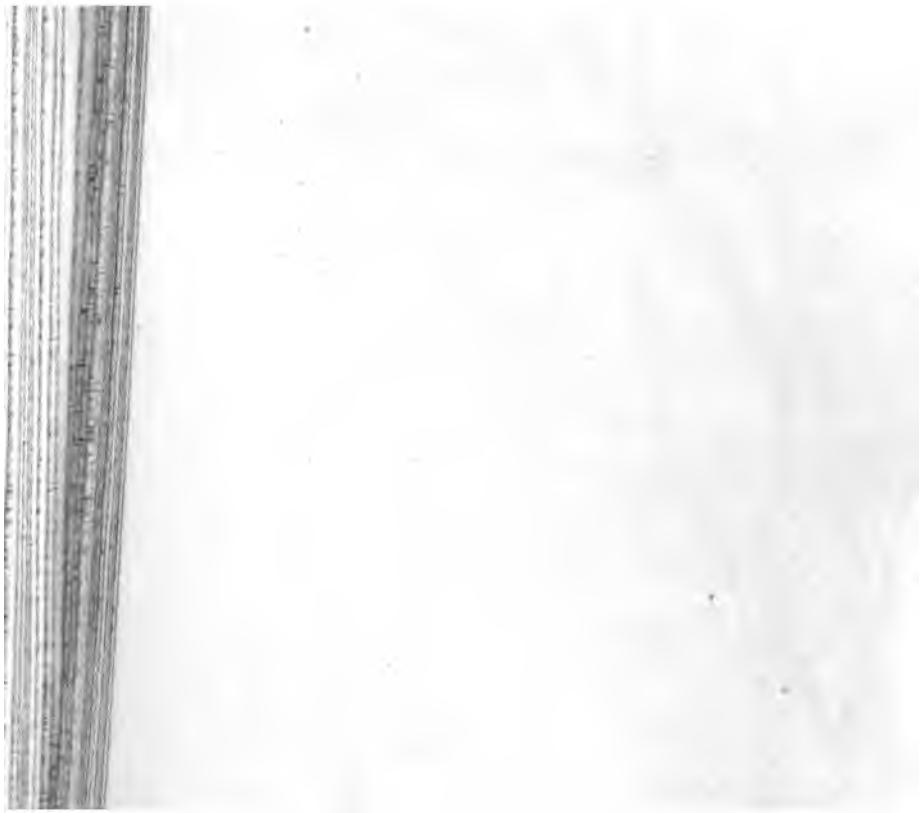


*Micronychia madagascariensis*, Oliv.



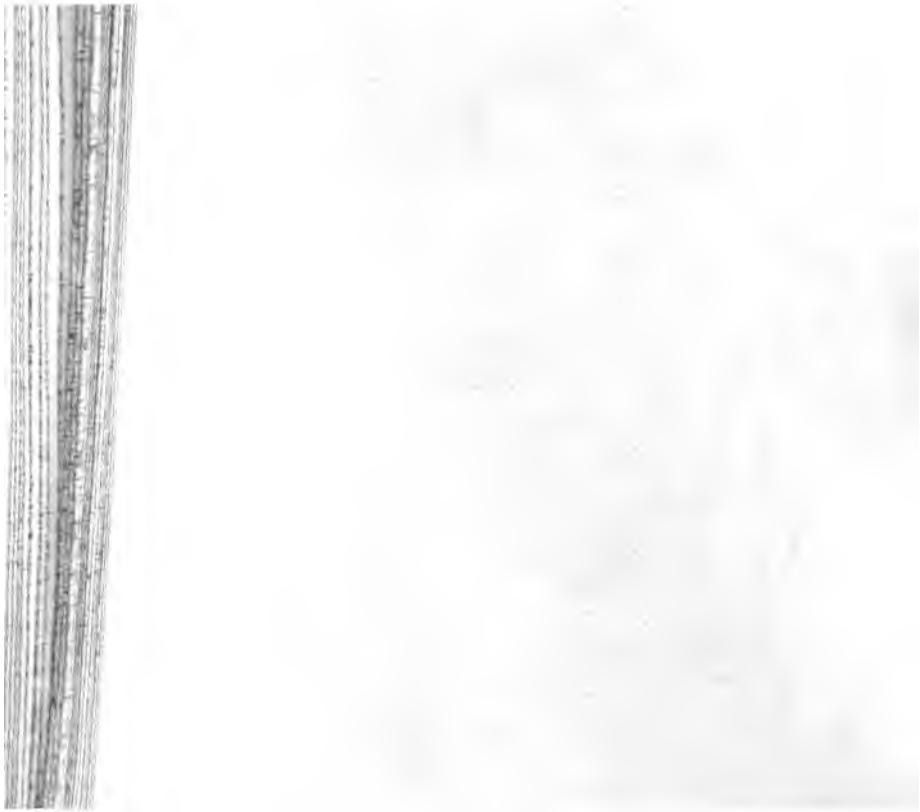


*Gamblea ciliata* C.B.Clarke





*Amphidoxa gnaphalodes*, D.C.





*Pentzia pinnatifida* Oliv.



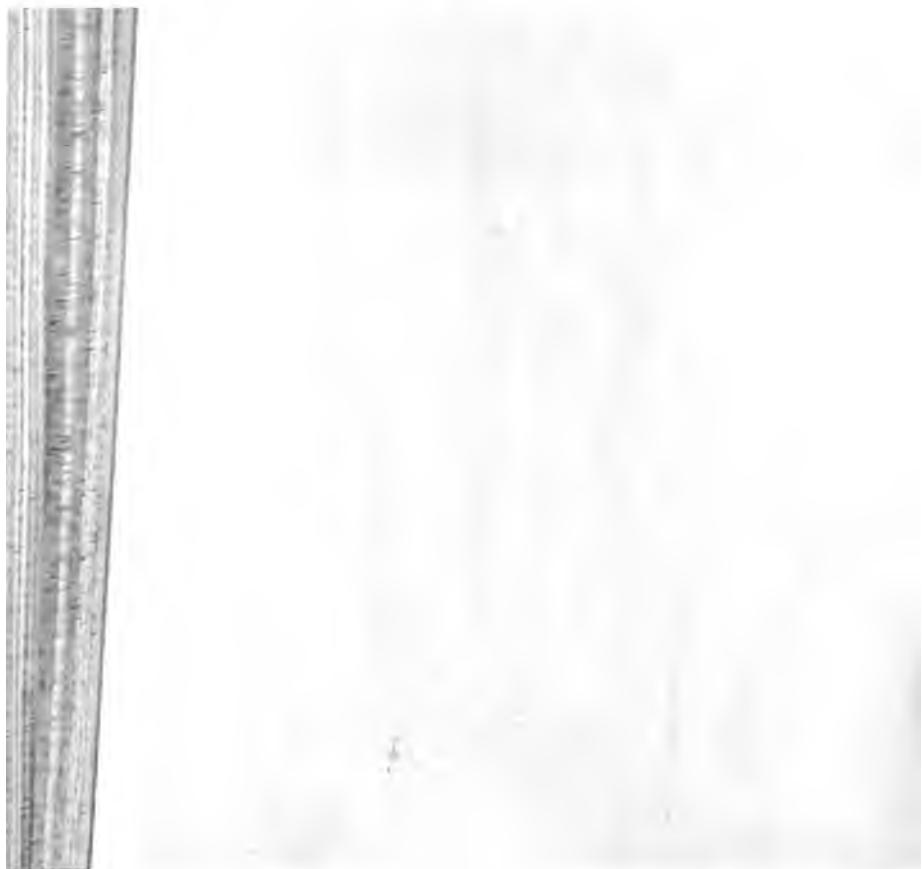


*Courtoisia cyperoides*, Lées.





*Eriospora pilosa* Benth.



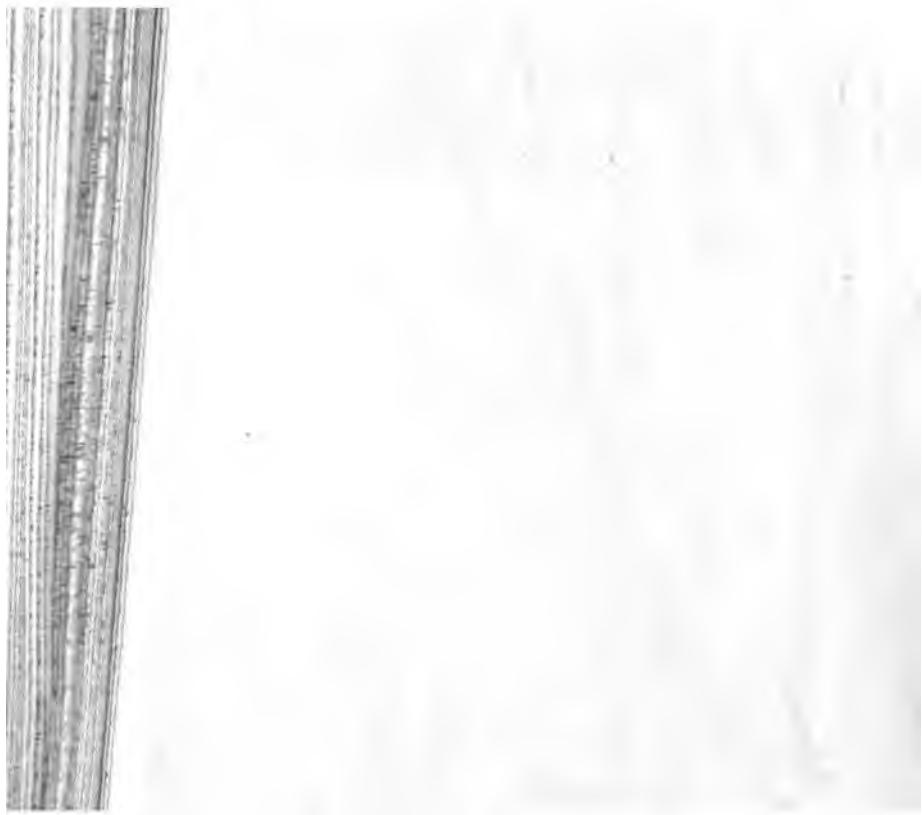


*Cyathochæte clandestina*, Benth.





*Rhynchospora ruppioides* Benh.





*Arthrostylis eriphylla* R.Br.





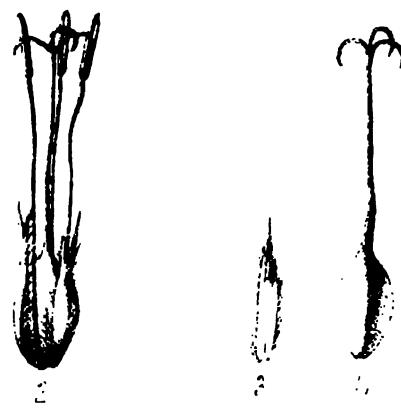
*Actinoschœnus filiformis*, Benih.





*Pteroscleria longifolia*, Griseb.





*Trichopteris capensis* Fenzl

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*Allium stenoccephala* Oliv.





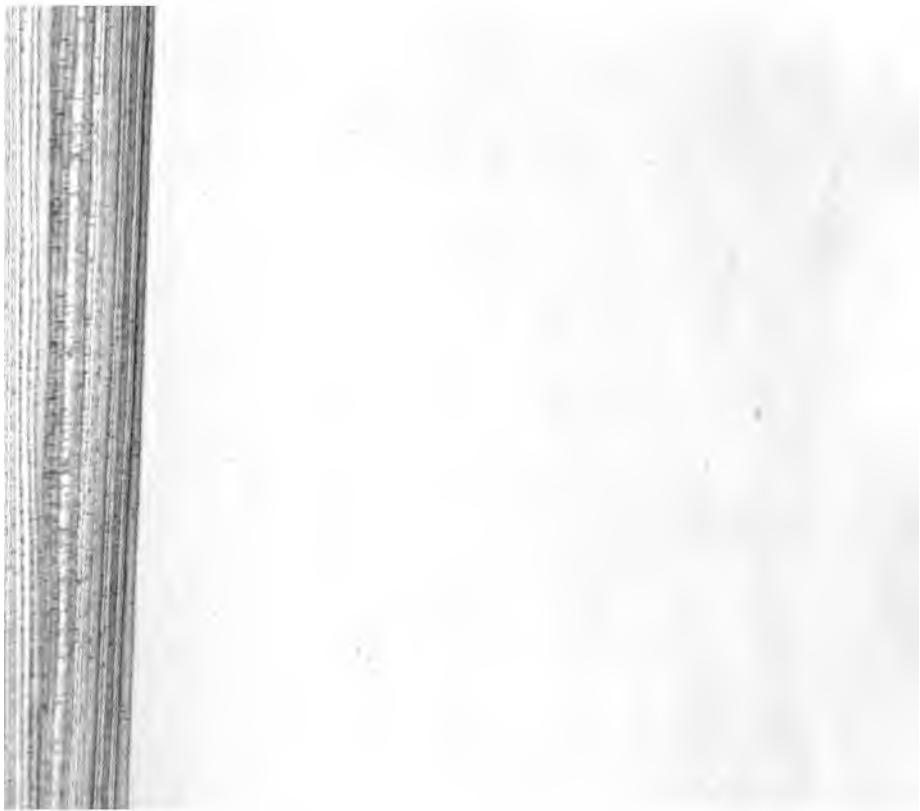
*Acacia Hunteri*, Oliv.





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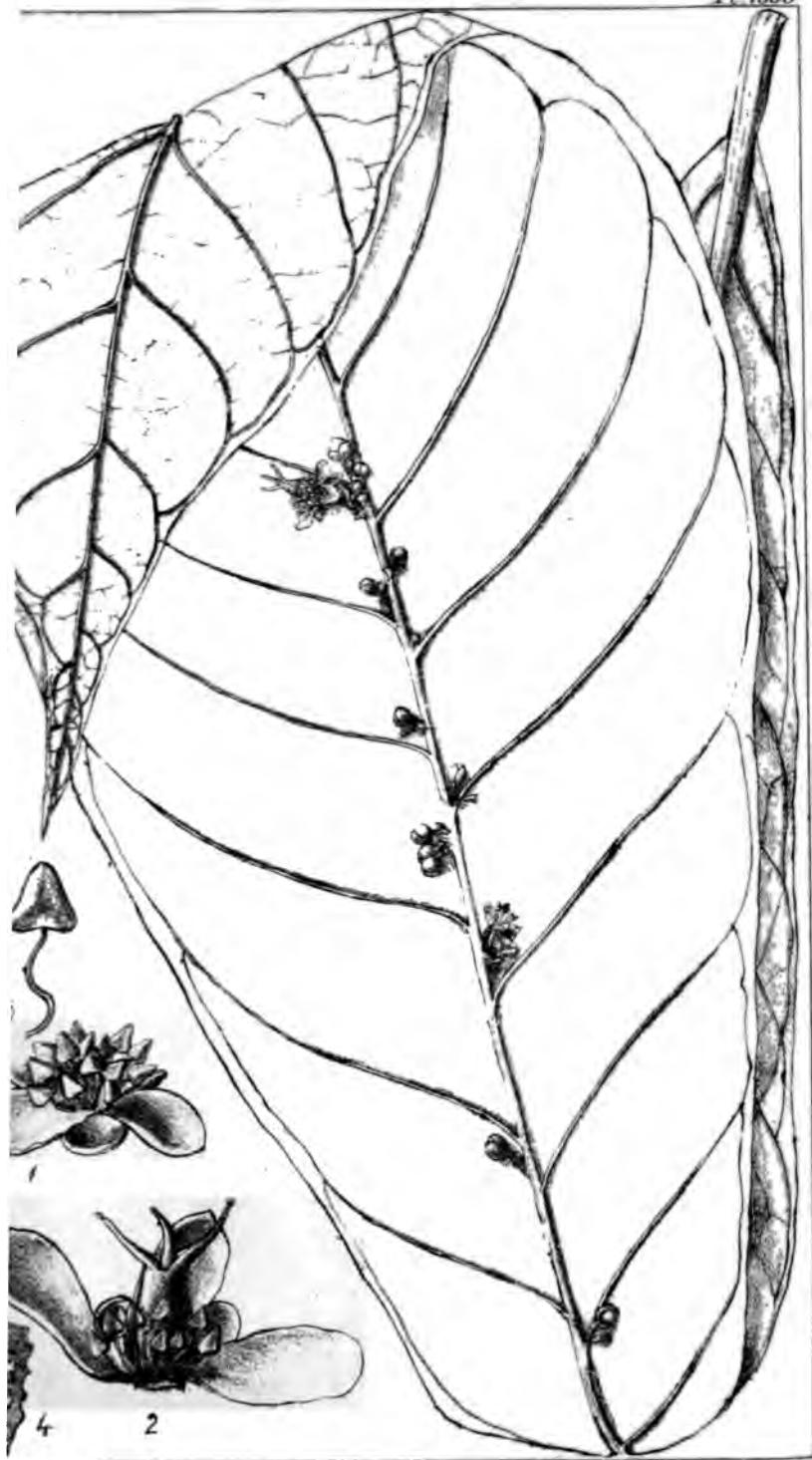
Tecoma Nyassæ, Cliv





*Legoniella Kalbreyeri*, Oliv.





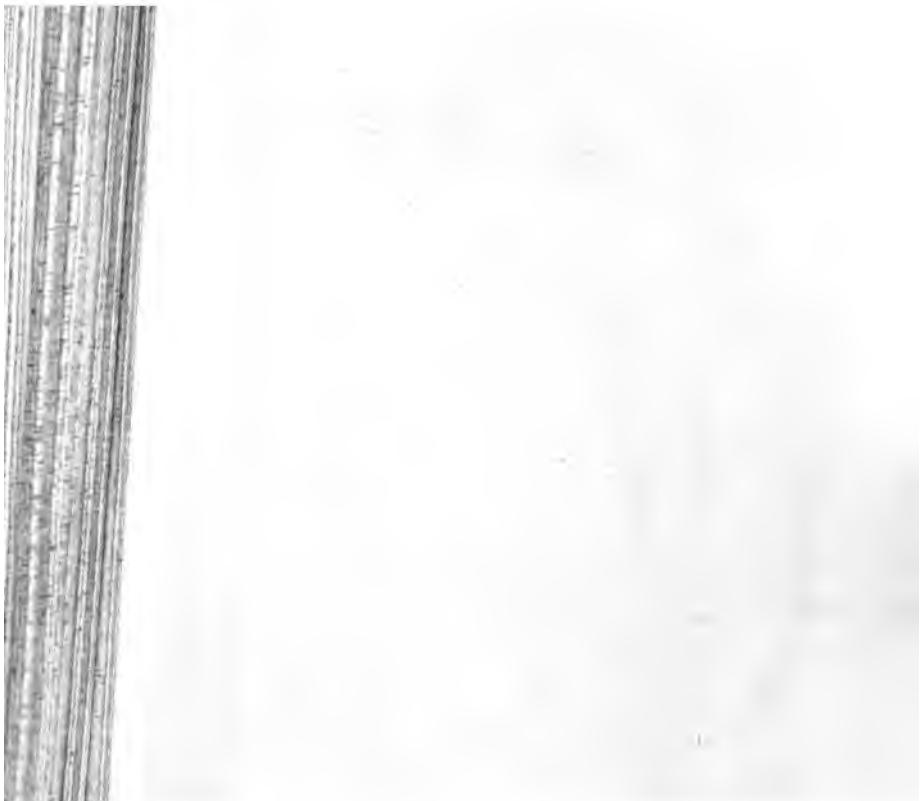
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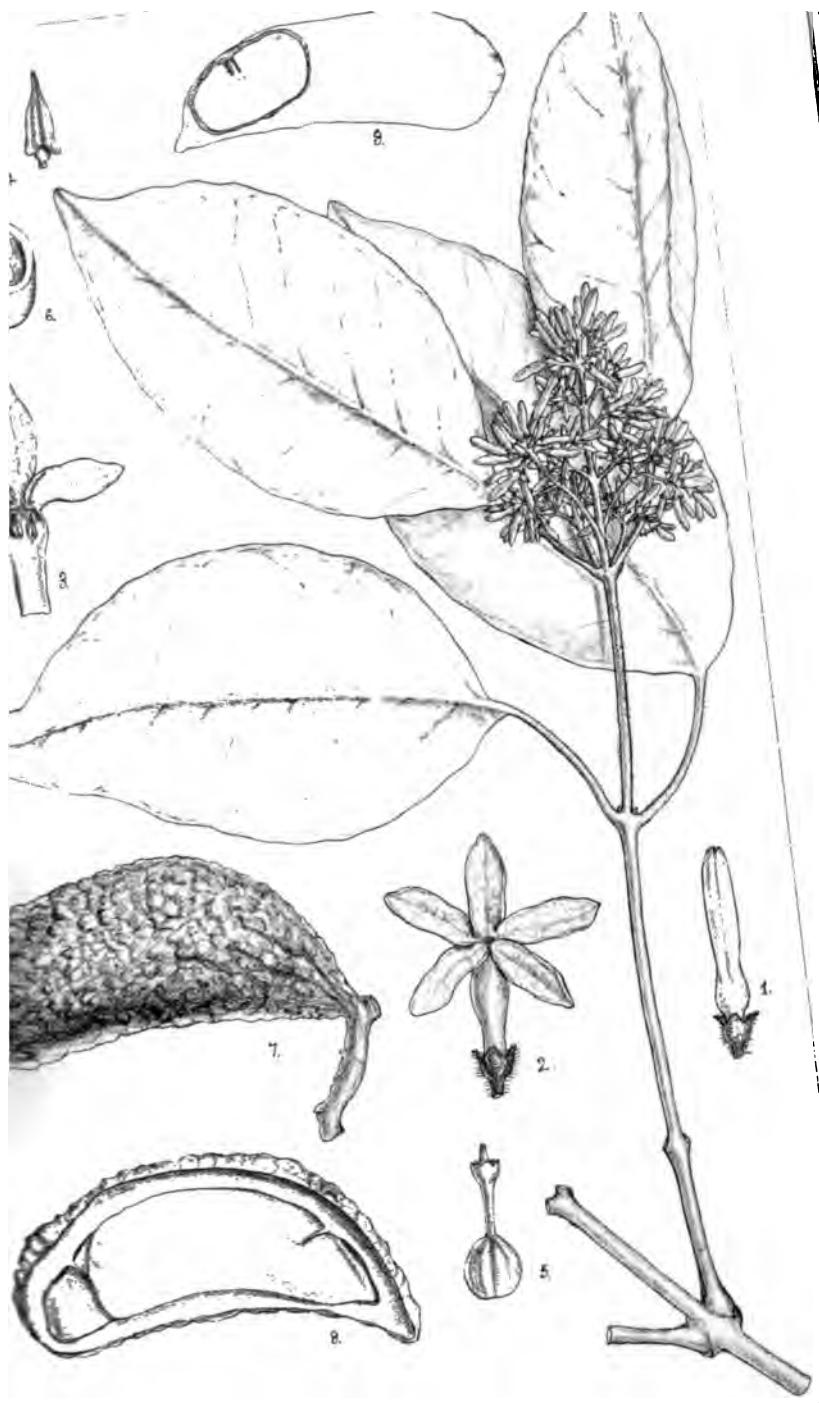
*Phyllobotryum spathulatum* Muell. Arg.





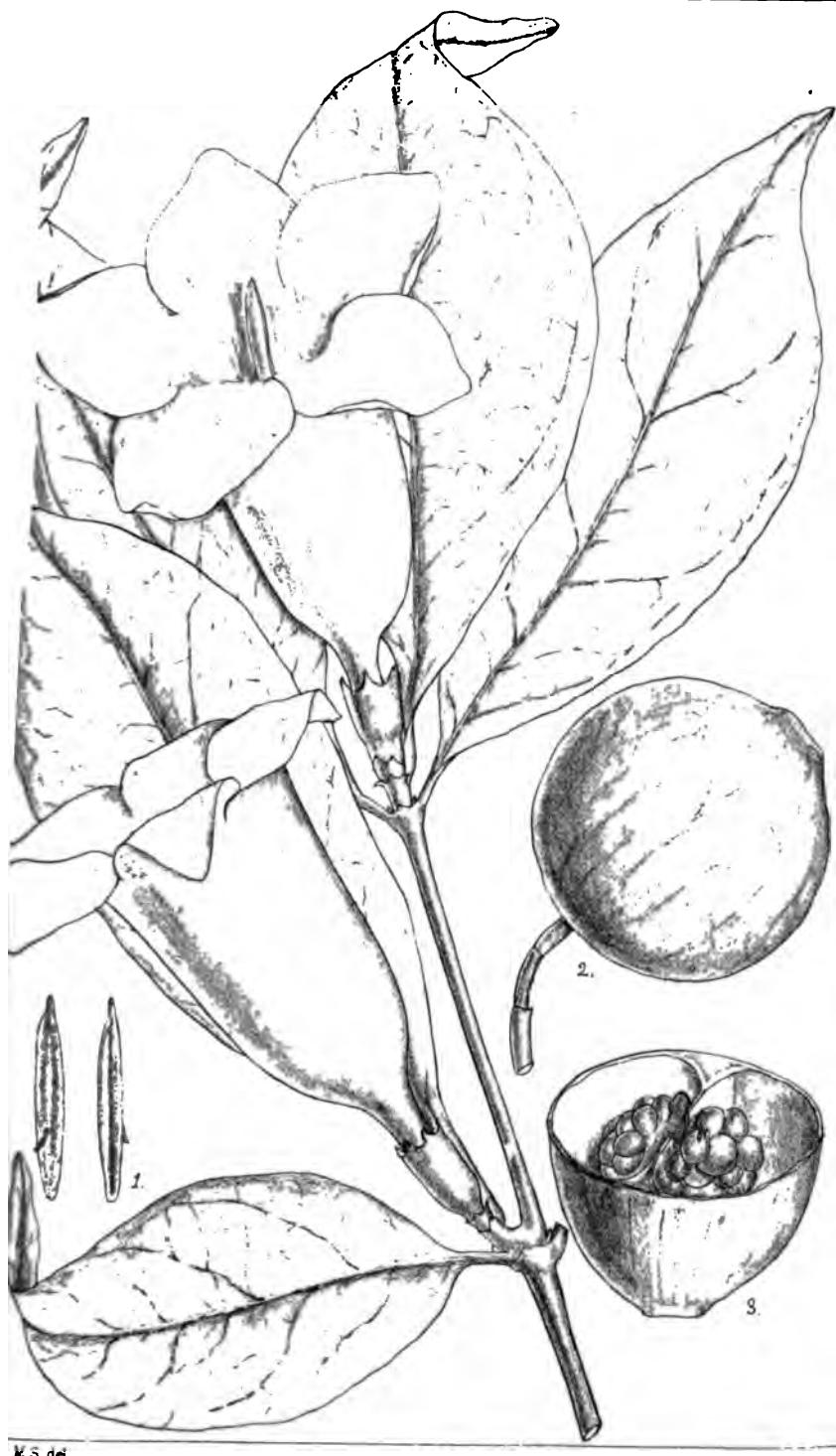
*Indigofera trachyphylla*, Benth.





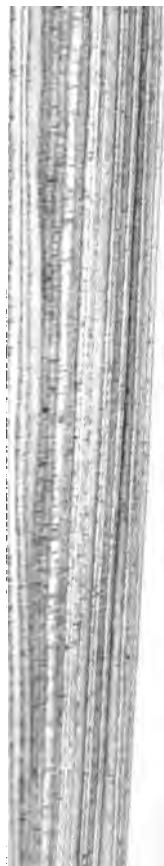
~~MS. del~~ Lumbachia Mossambicensis, Benth.





K. S. del

*Randia Buchananii* Oliv.



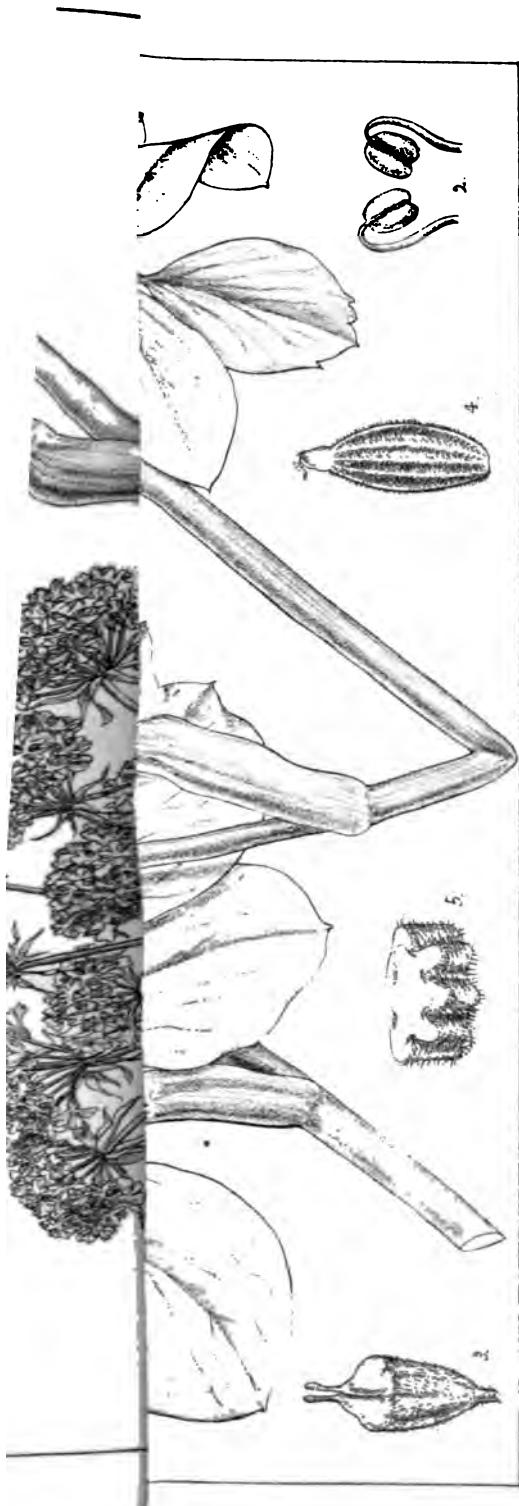


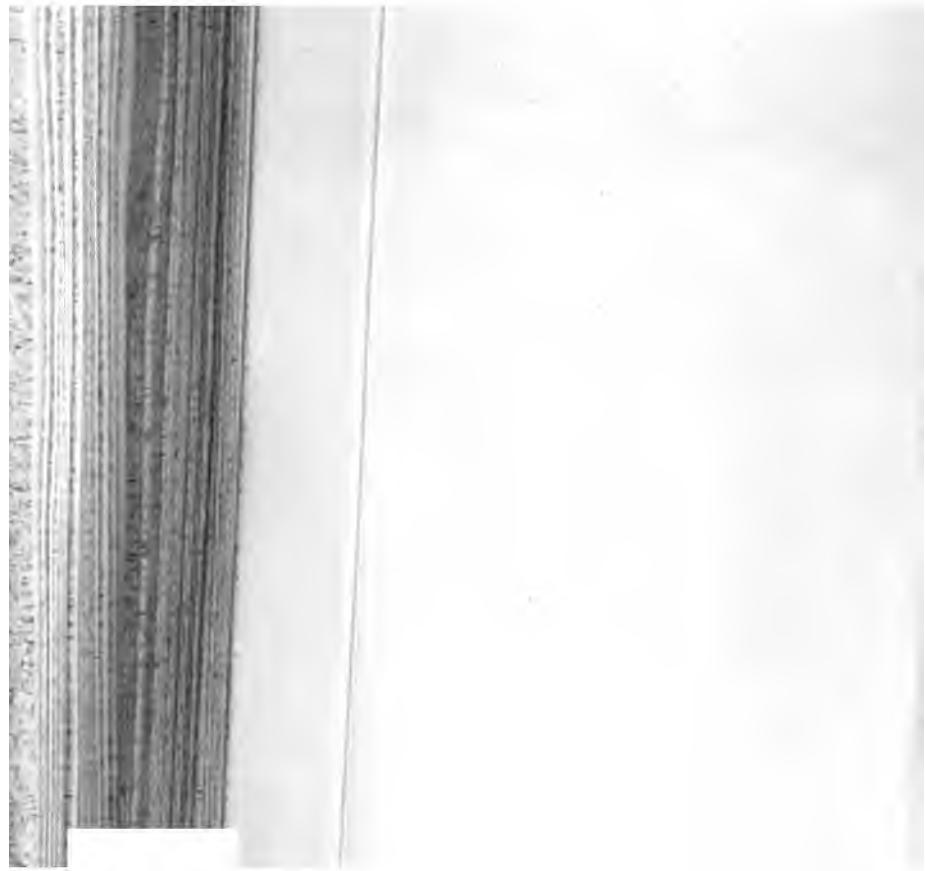
*Burmannia Kalbreyeri Oliv.*

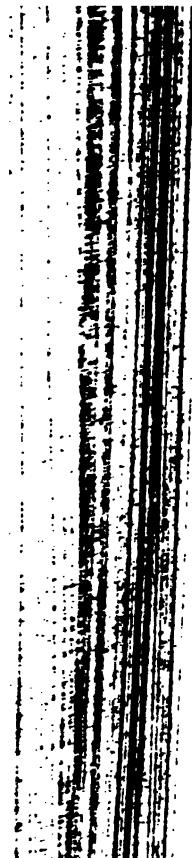


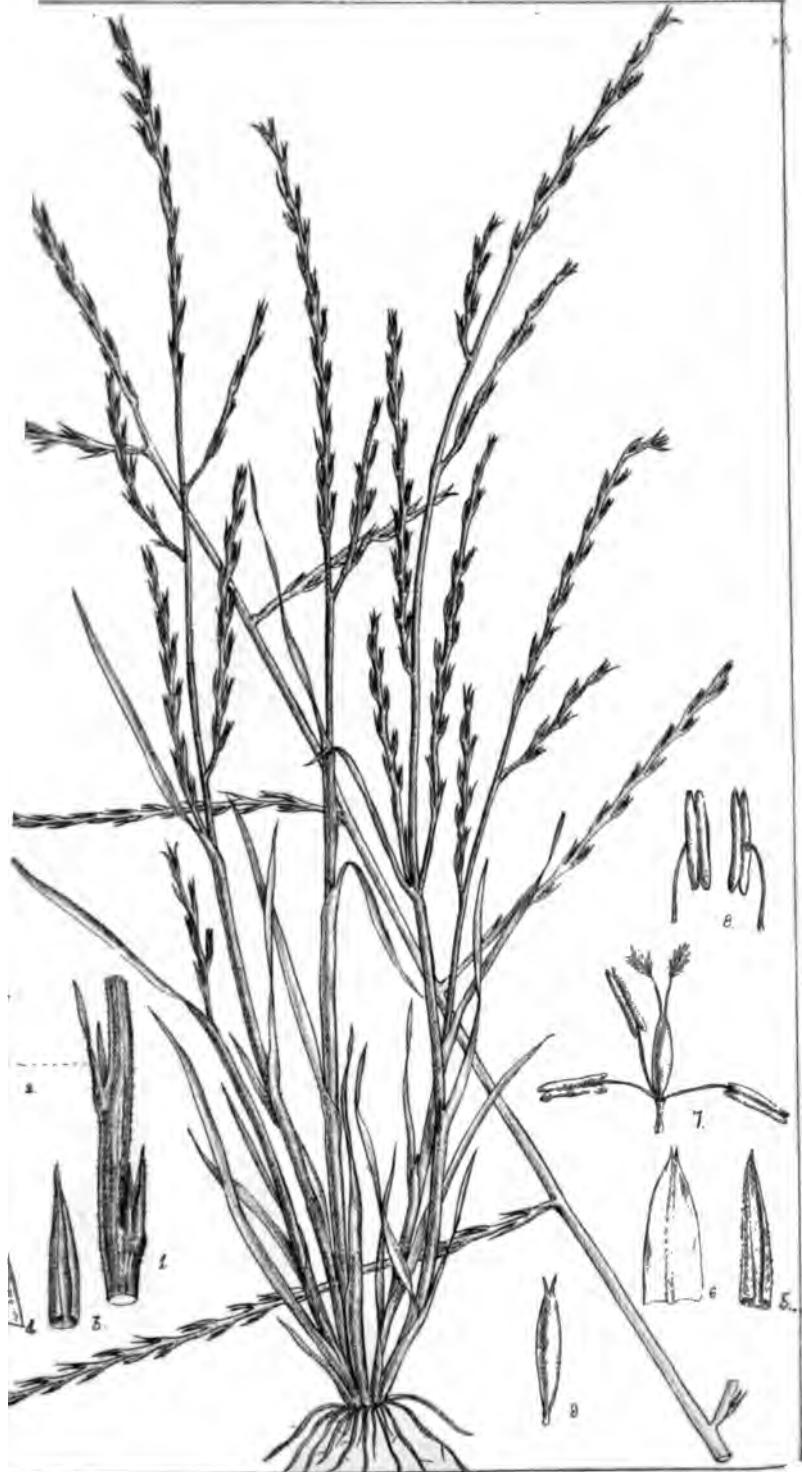
*Physotrichia Buchananii*, Benth.

4.5.1

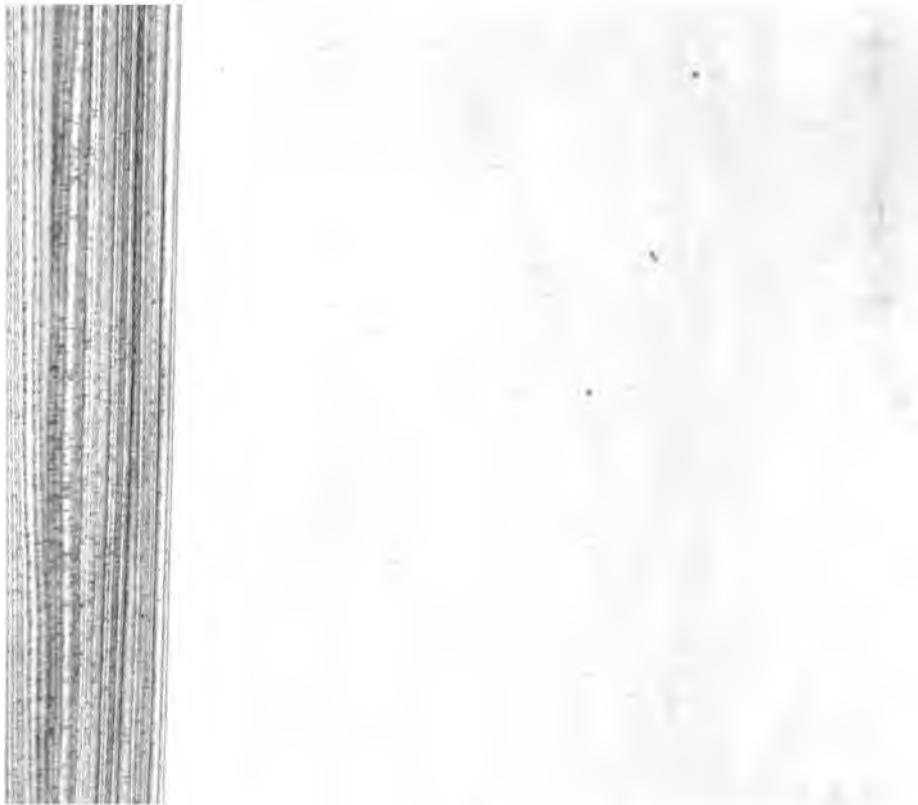








*Schedonnardus texanus* Steud



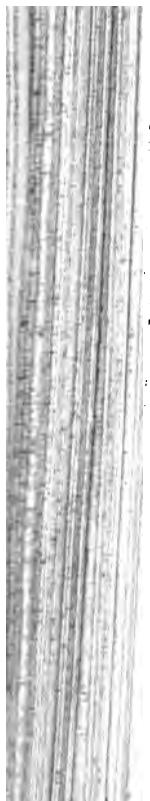


MS. A. 1. 2. 3.  
*Micraira subulifolia* F. Muell.





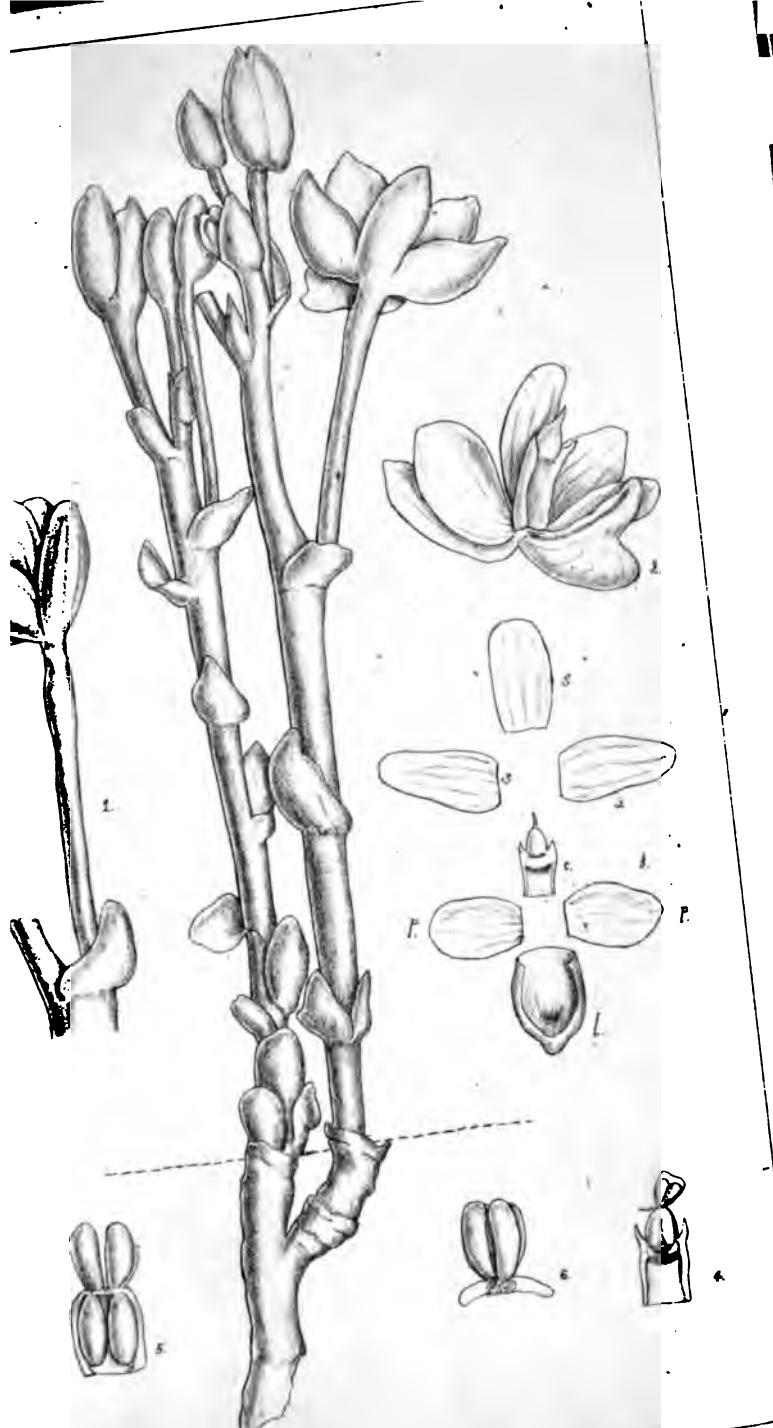
*Aciachne pulvinata* Benji



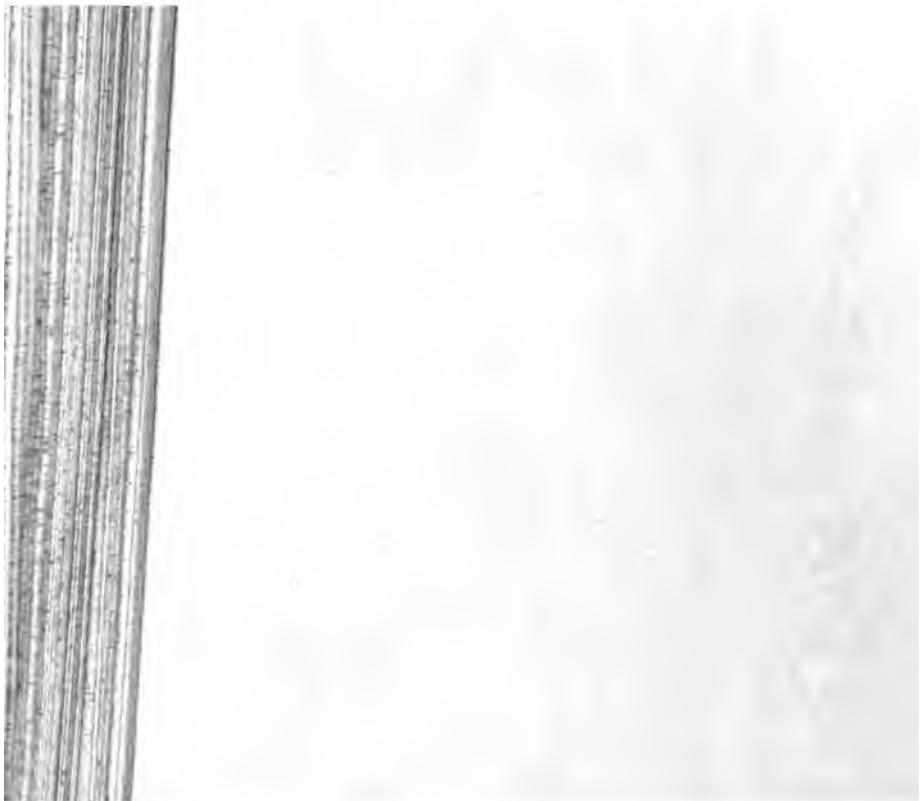


*Yoania japonica* Max.



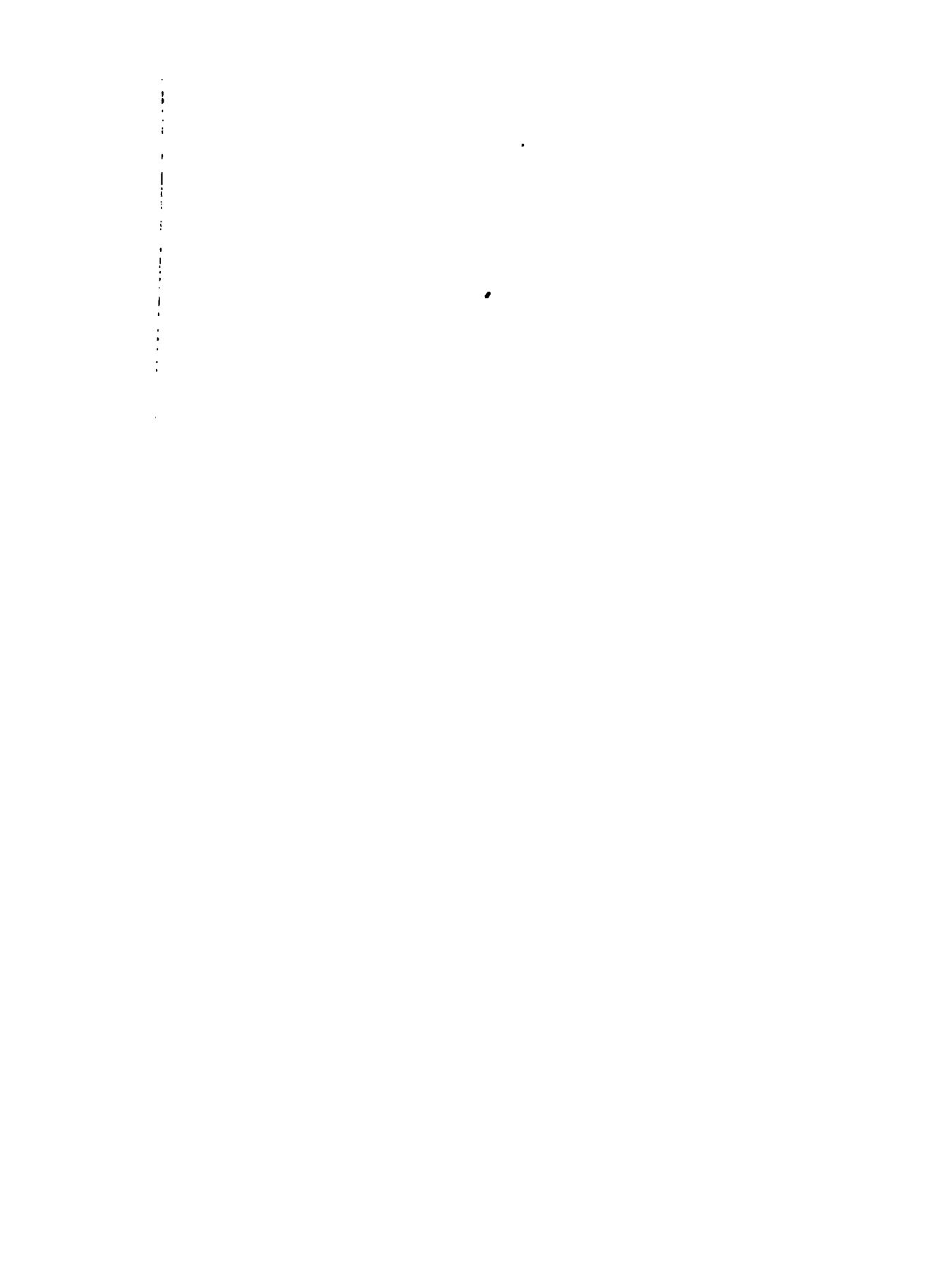


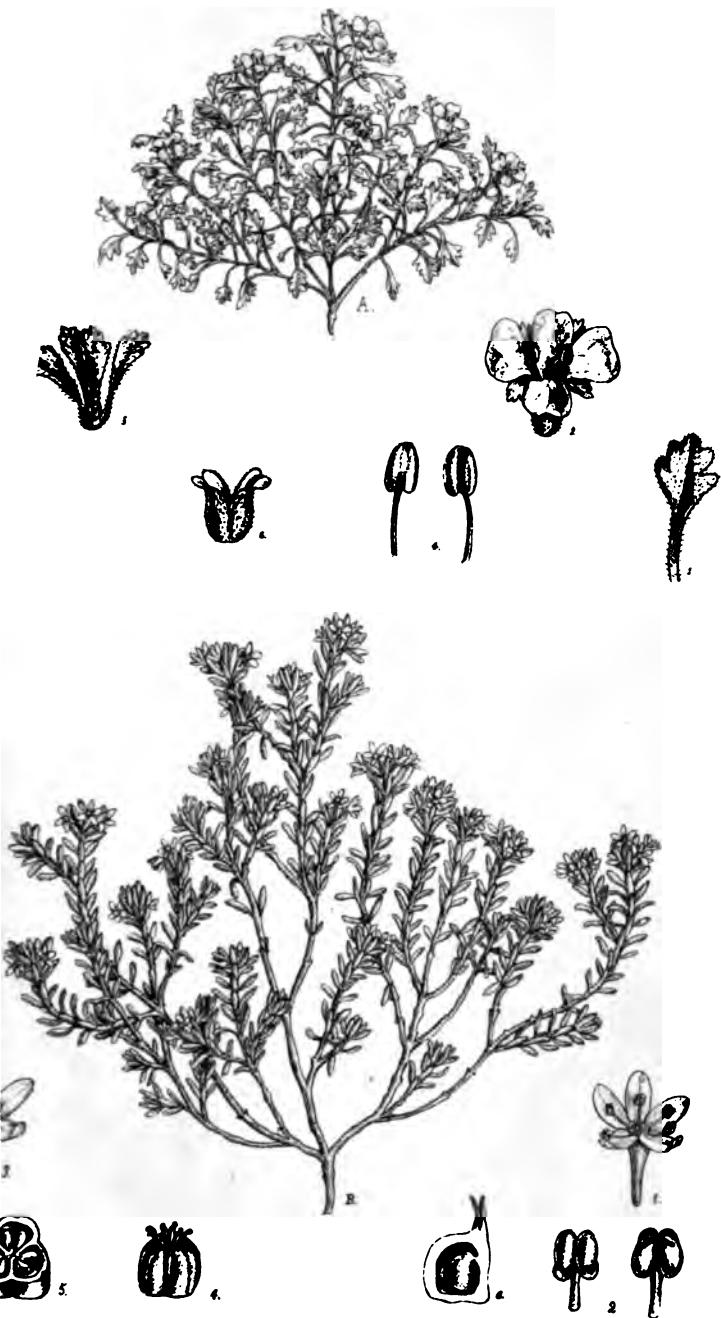
*Erica Max.*





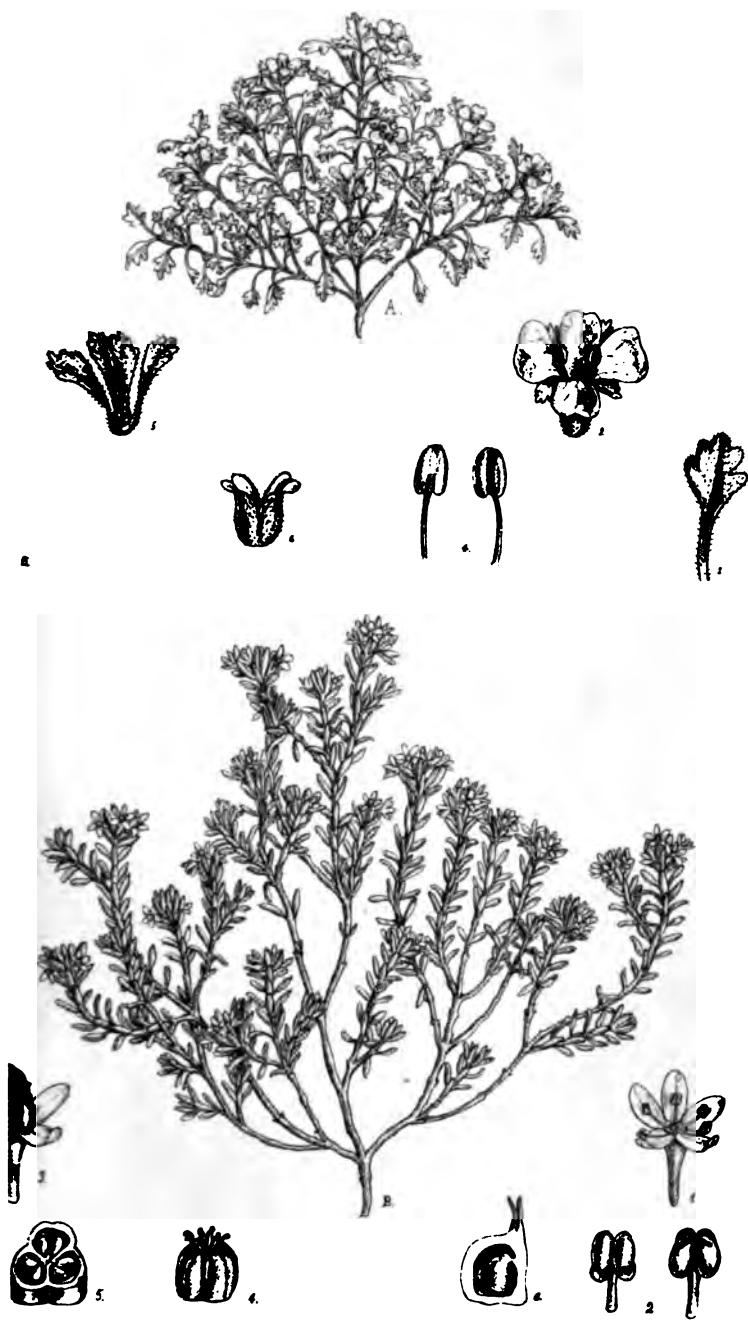
~~del.~~ -- *Lia Broomeana*, Horne.





*Chrysanthemum Cheesemani*, Benth.  
Chrysanthemum





**A. *Veronica Cheesemanii*, Benth.**

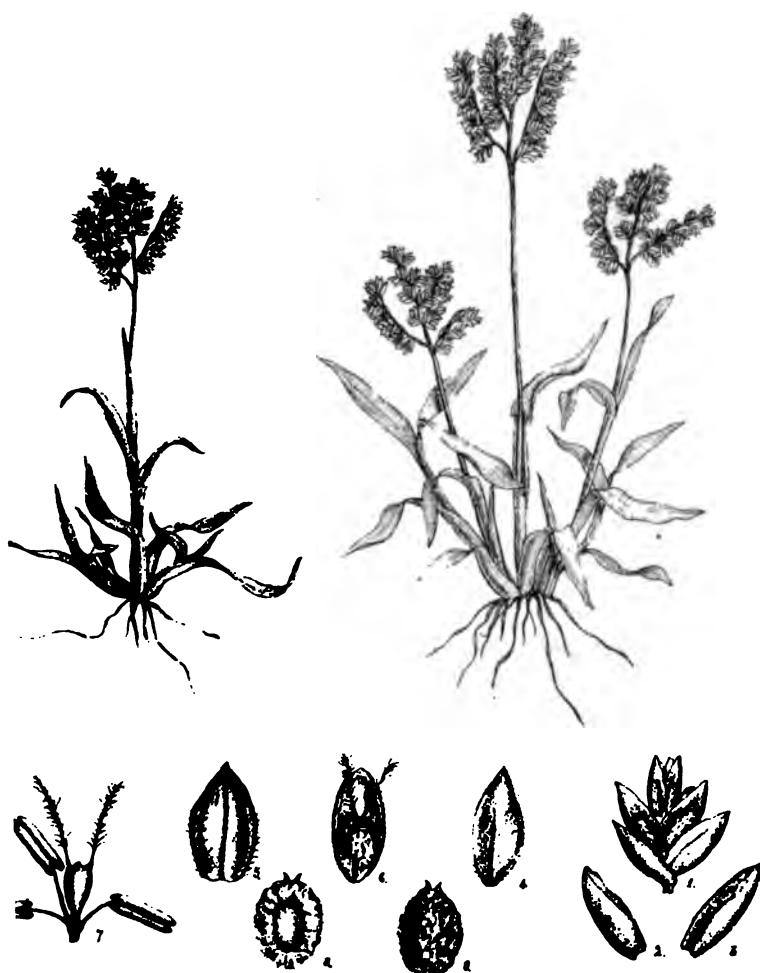
**B. *Poranthera alpina* Cheesem.**



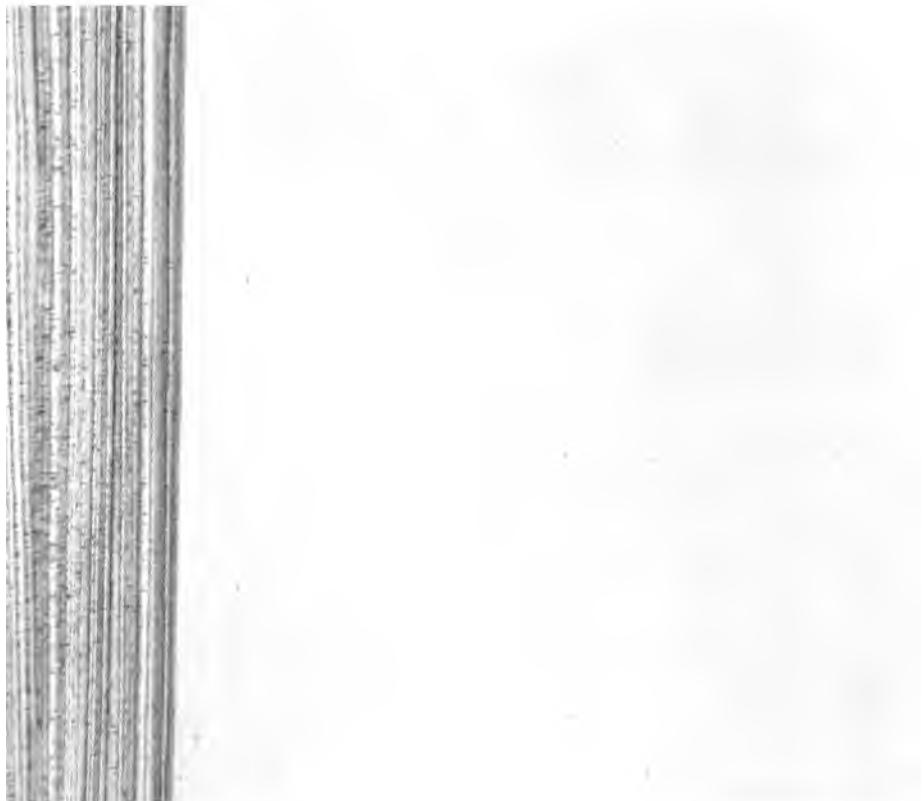


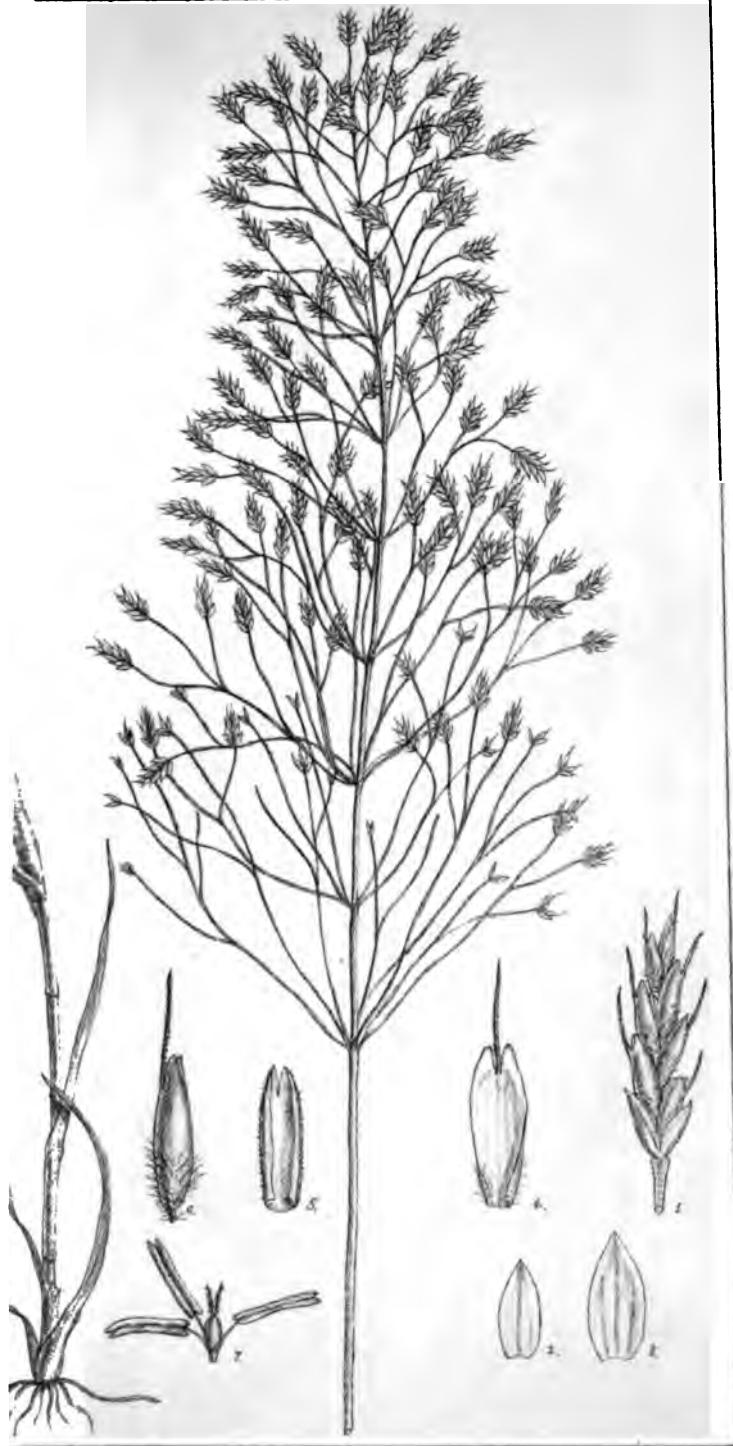
*Rhanterium epapposum* Oliv.



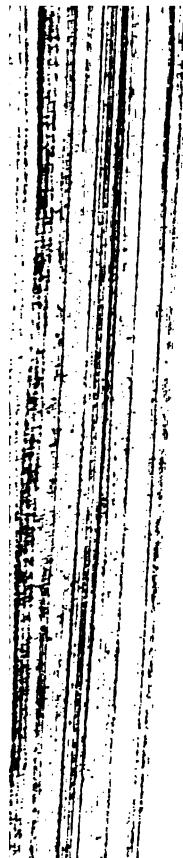


*Eragrostis Coelaehyrum* Benth





*Nephelochloa orientalis* Boiss.





*Eragrostis Piercei* Benth.





*Eragrostis Schimperi* Benth



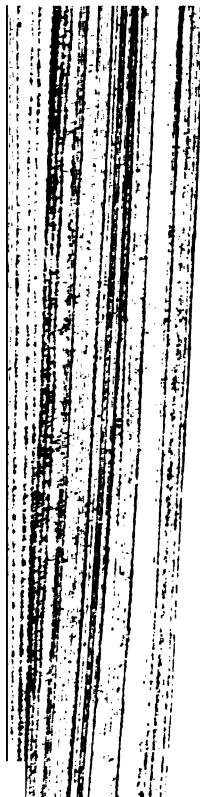


*Munroa squarrosa* Torr





*Fingerhuthia africana*, Lehm





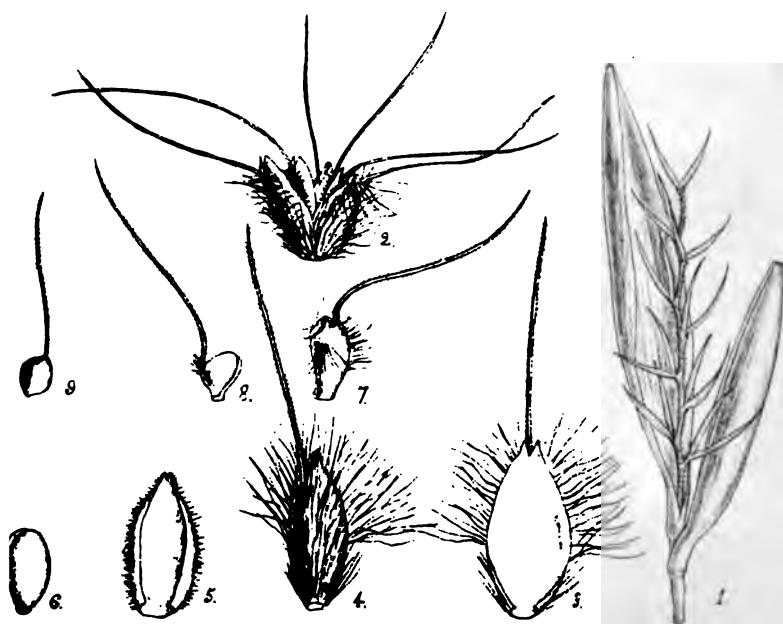
*Dissanthelium supinum*, Trin.





*Dissanthelium californicum*, Benth.





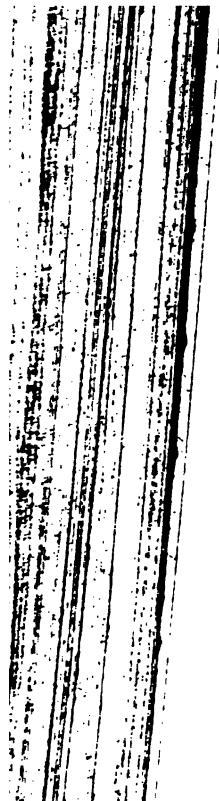
s.del.

*Cryptochloris spathacea*, Benth.





*Craspedorhachis africana*, Benth.





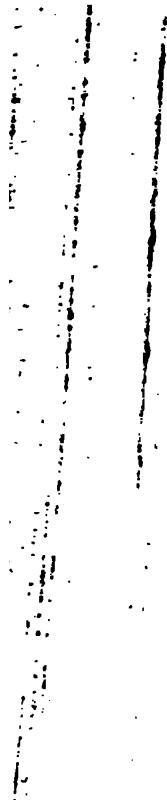
M.S del

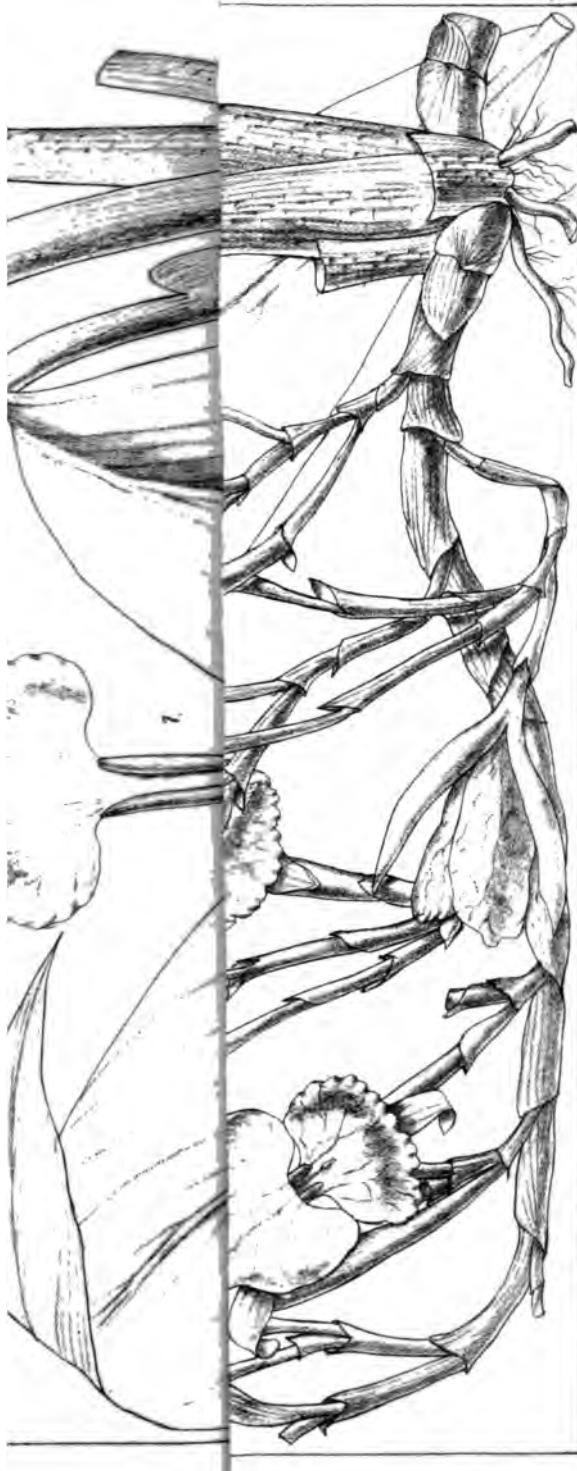
*Schaffnera gracilis*, Benth.





*Cleistachne sorghoides*, Benth.

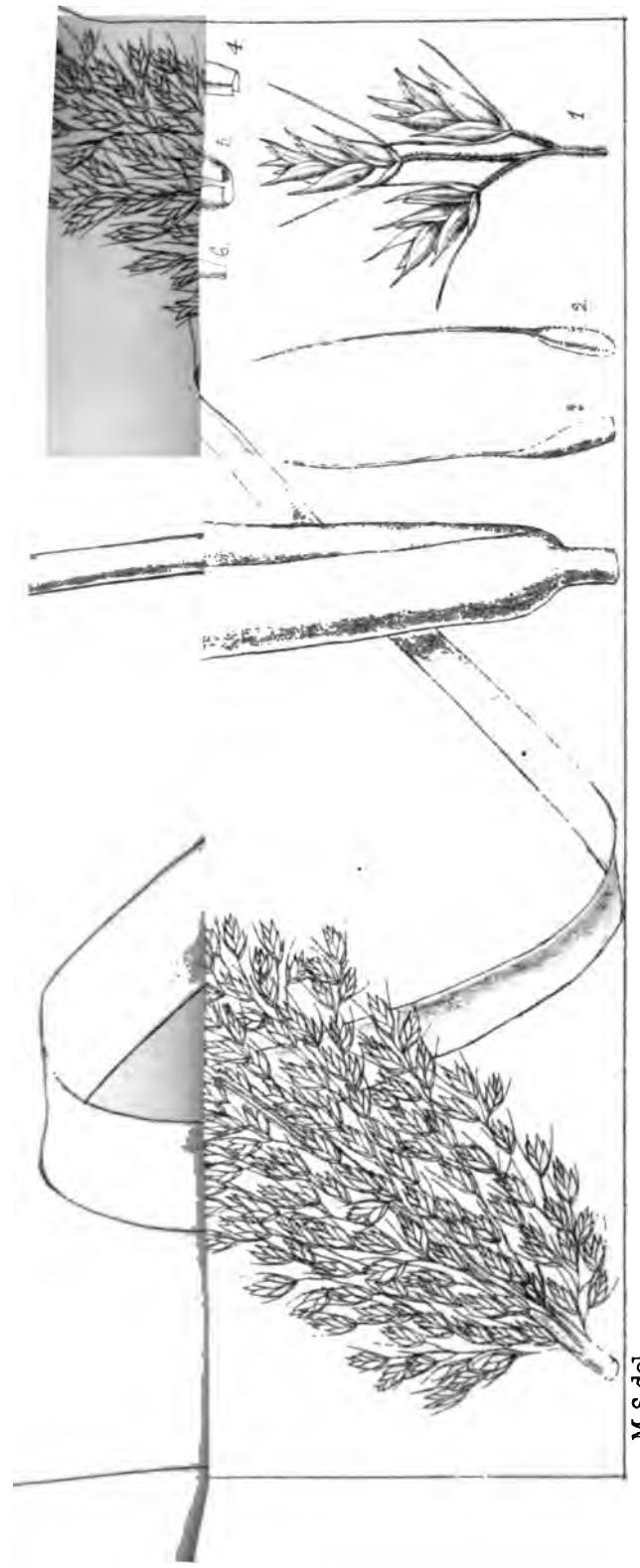




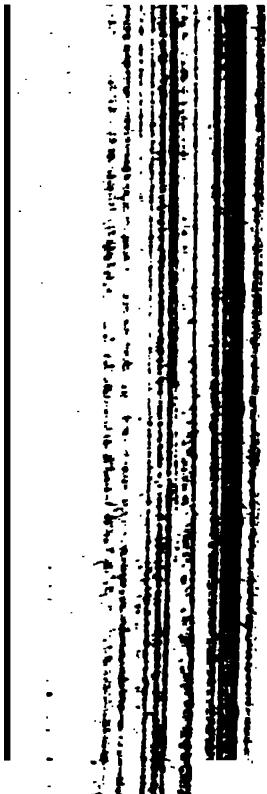
M. S. del.

*Cyphostigma pulchellum*, Benth





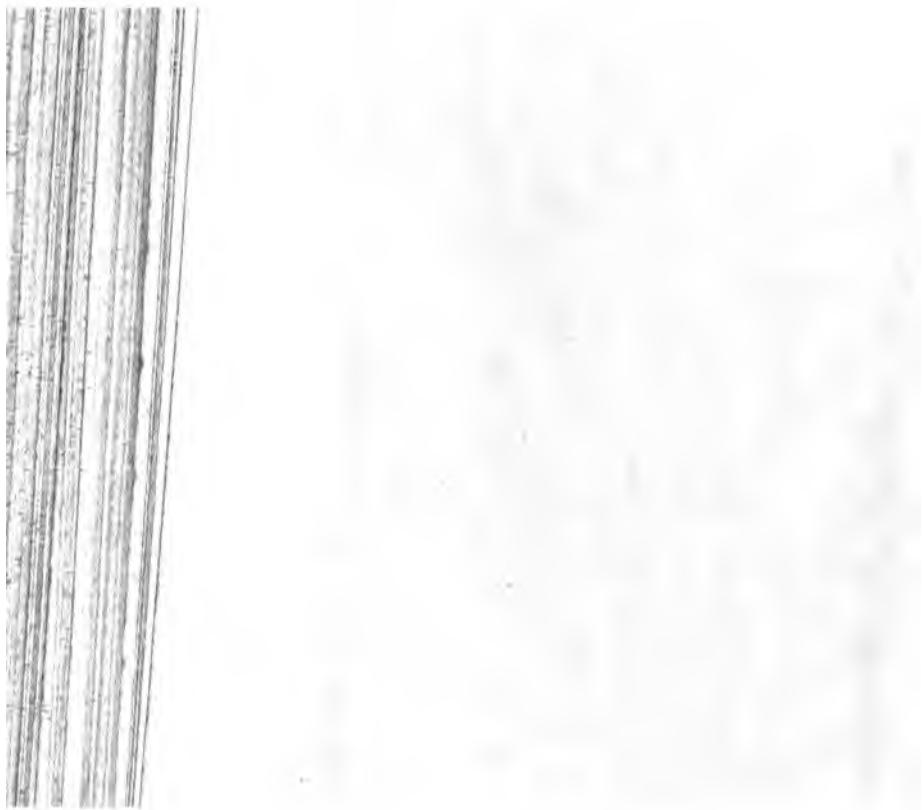
*Fragaria Nigritana*, Rottb.

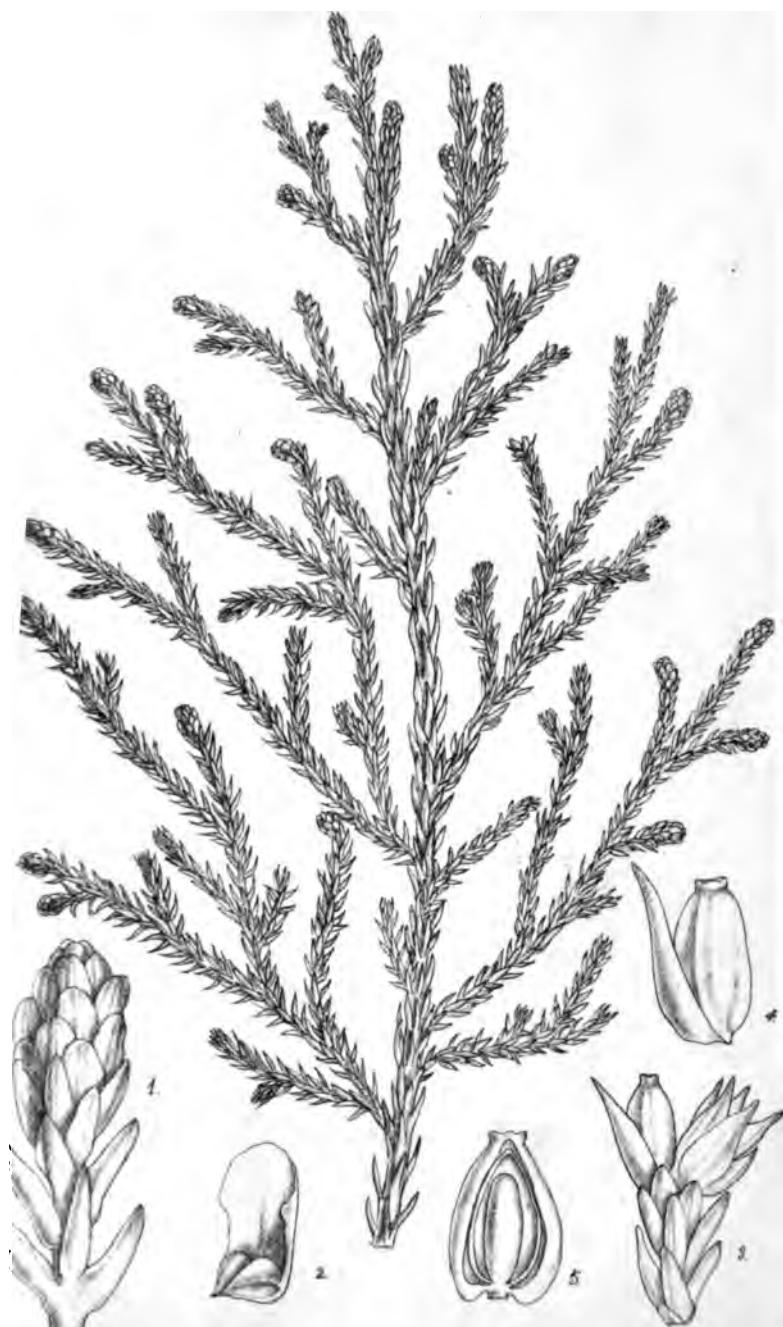




del.

*Pseudocentrum minus*, Benth.

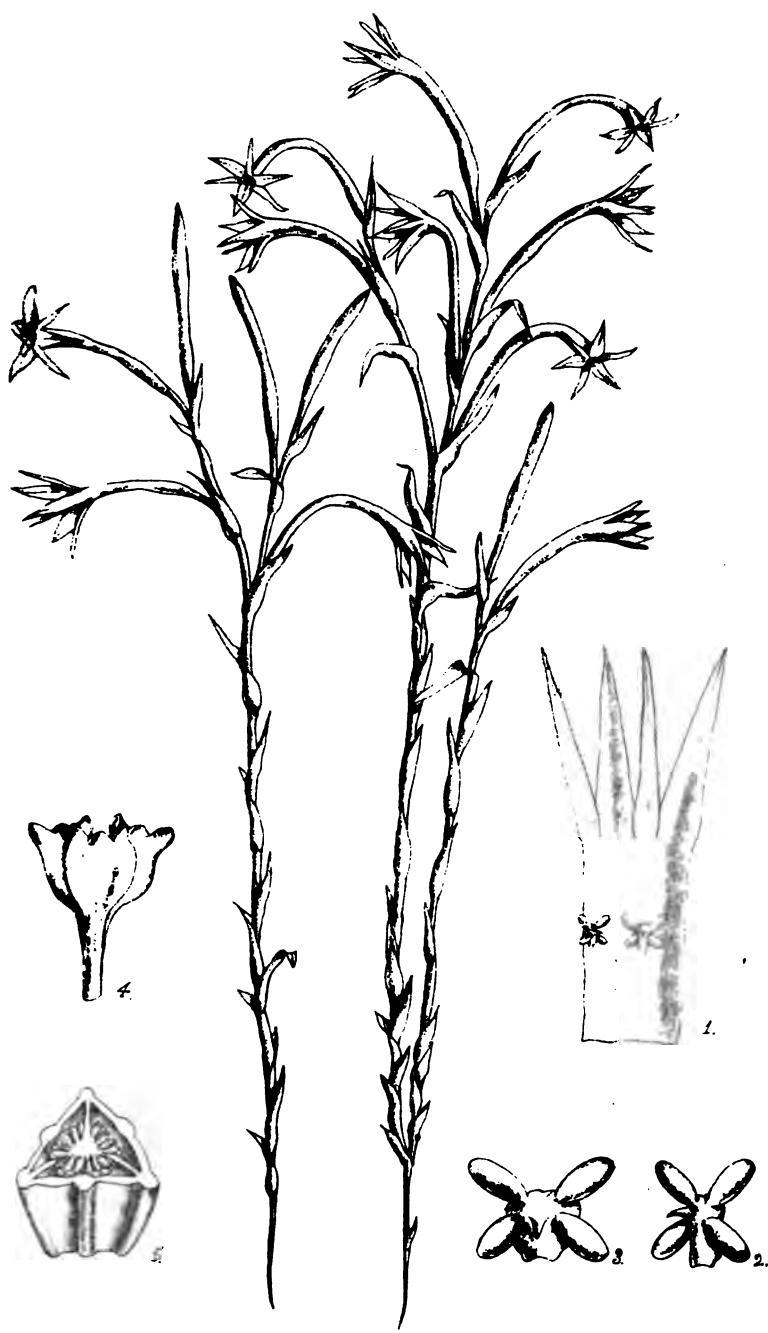




5 del.

*Pherosphaera Fitzgeraldi* F.v Muell.





del.

*Campylosiphon purpurascens* Benth.





*Helietta parvifolia*, Benth.



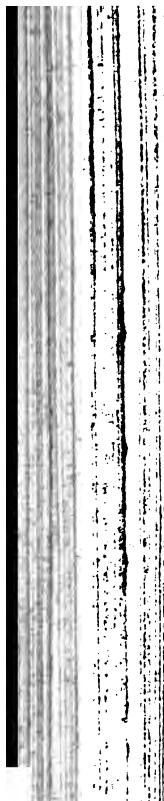
*Niebuhria Woodii, Oliv.*

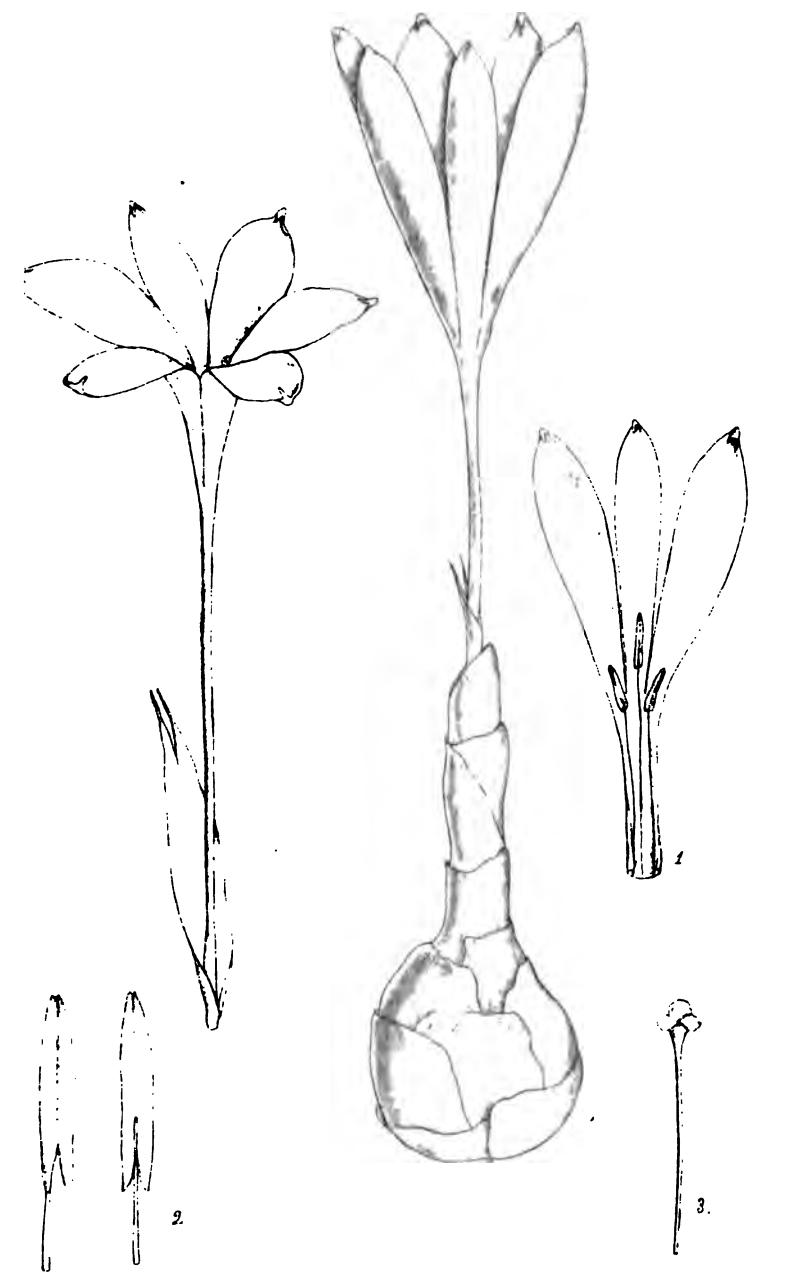
M. S. del.





*Simaruba monophylla*, Oliv.





lei

*Apodolirion Buchananii* J.C.B.





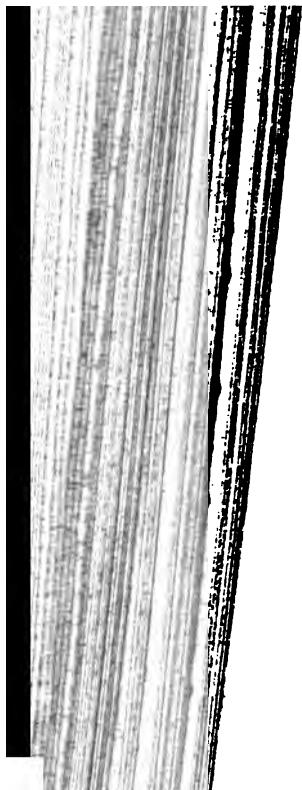
M. S. del.

Leontochir Ovallei, Phil.



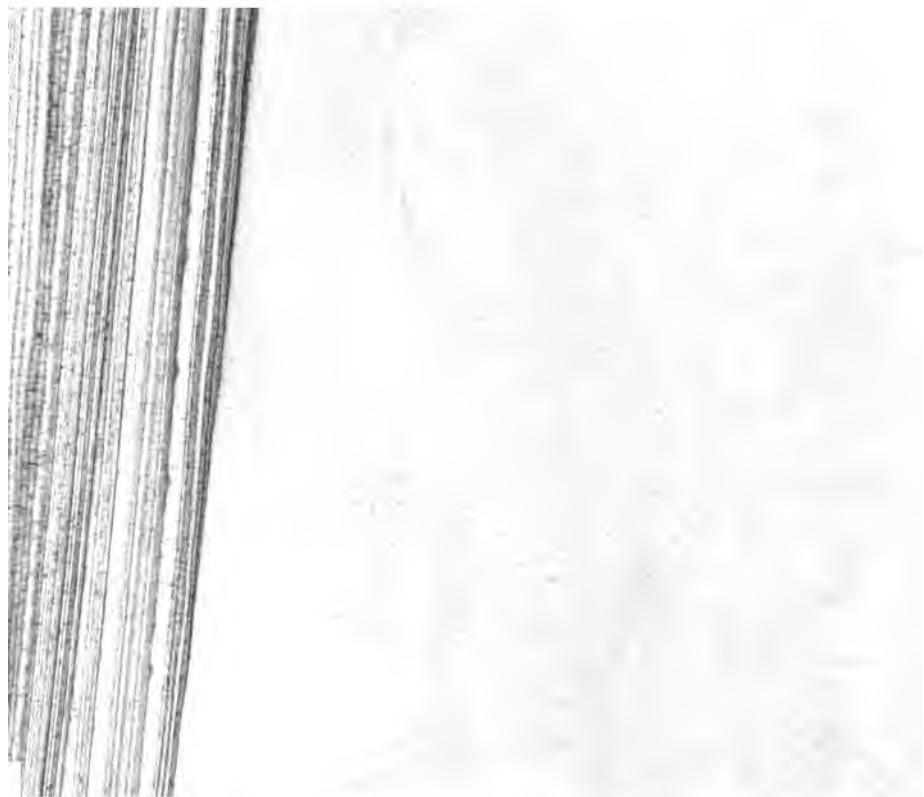
*Cola natalensis*, Oliv.

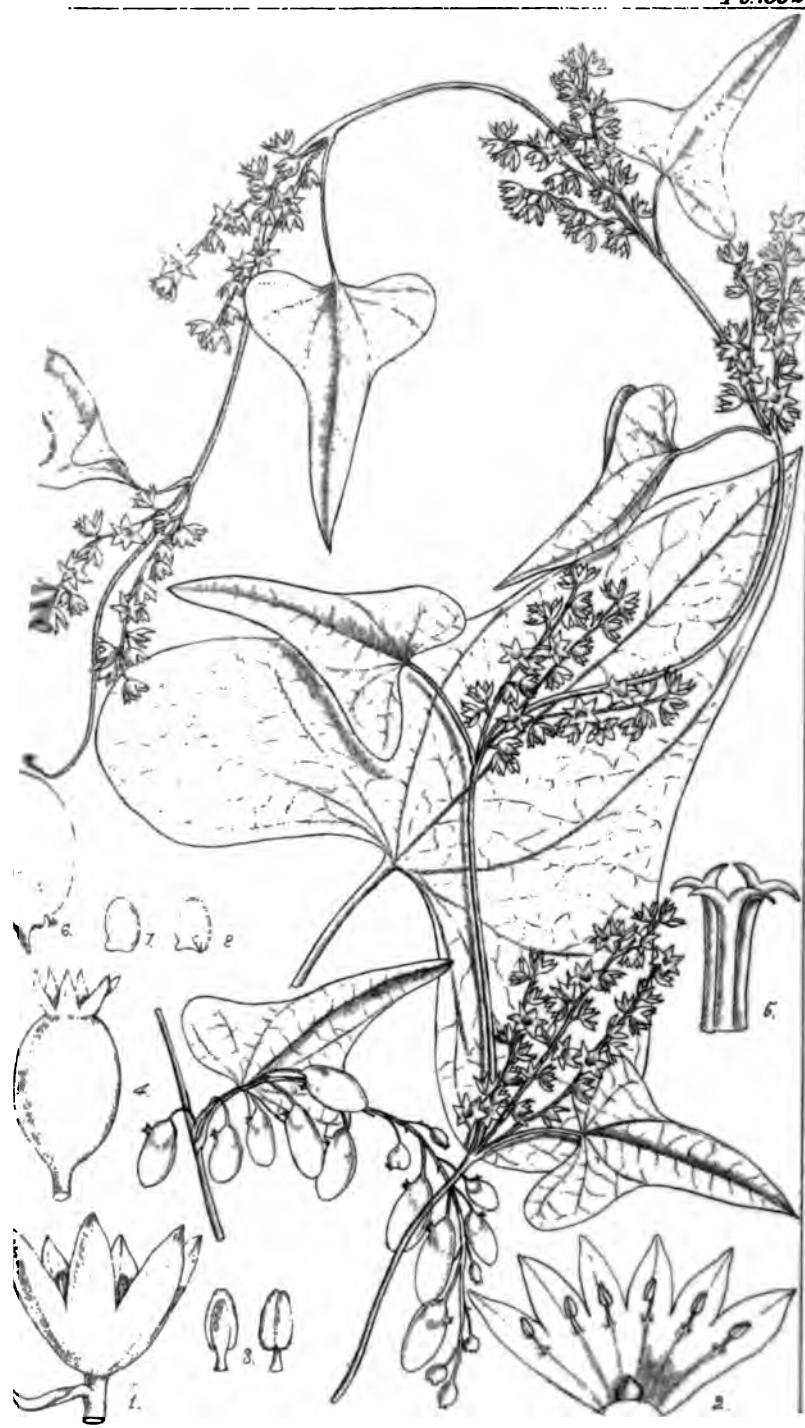
M. S. Jai





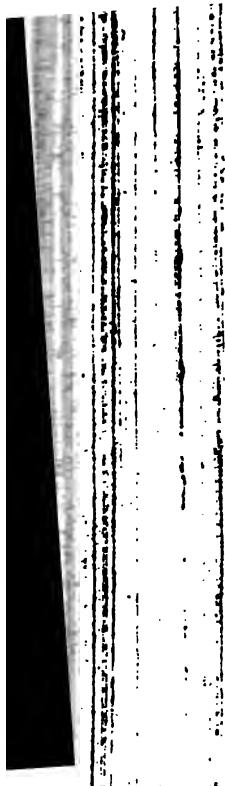
*Petermannia cirrosa*, F.M.





el.

*Rajania hastata*, L.





M. S. del

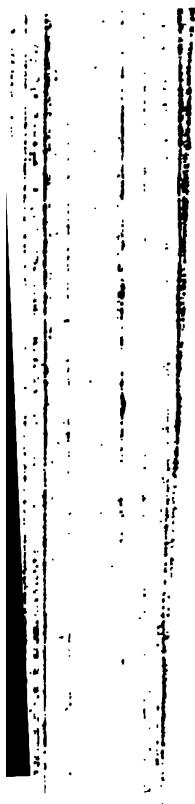
*Soyauxia gabonensis*, Olin.





I del.

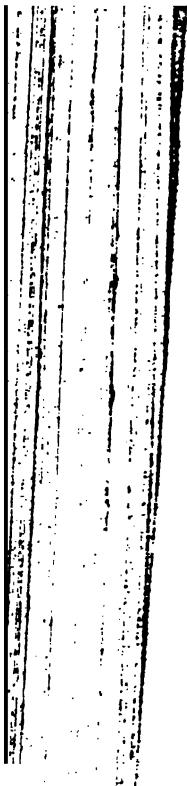
*Epallage dentata* D.C.





MS 21

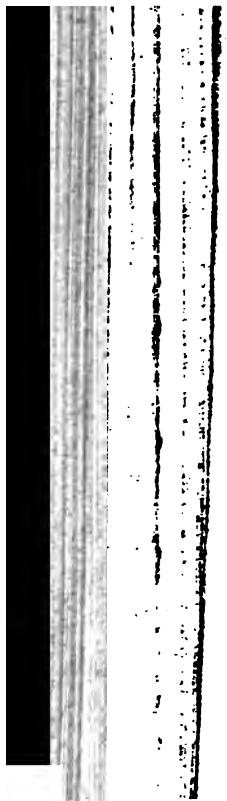
*Rhipogonum scandens* Forst.





M.S del.

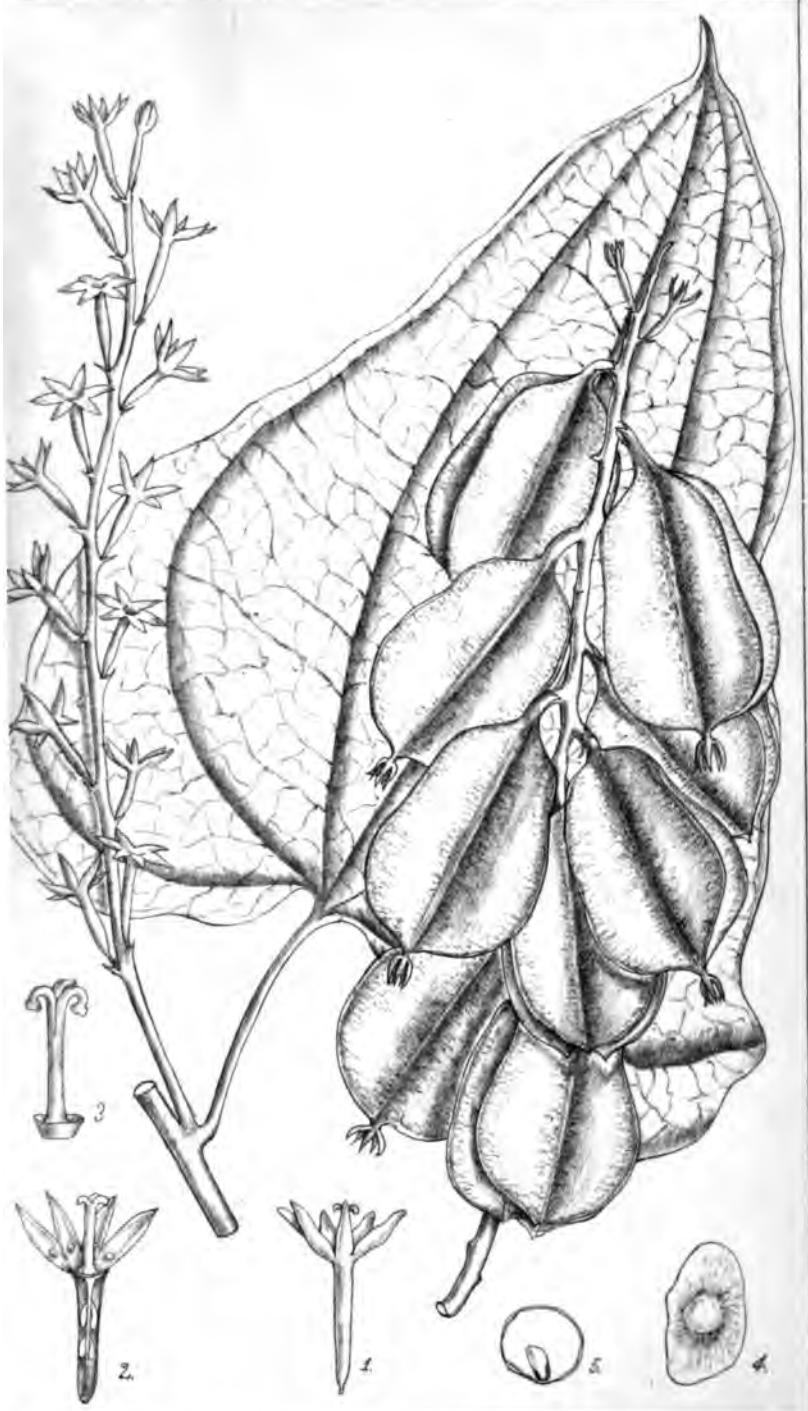
*Rhipogonum Elseyanum*, F. Muell.





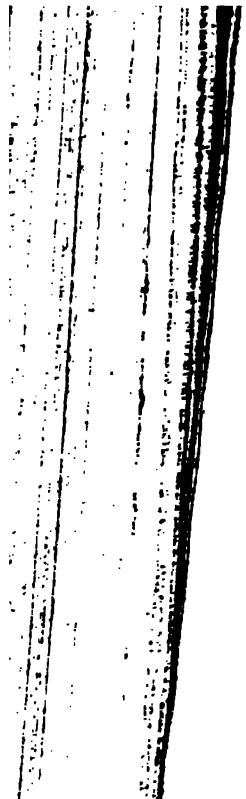
*Dioscorea Buchananii*, Benth.

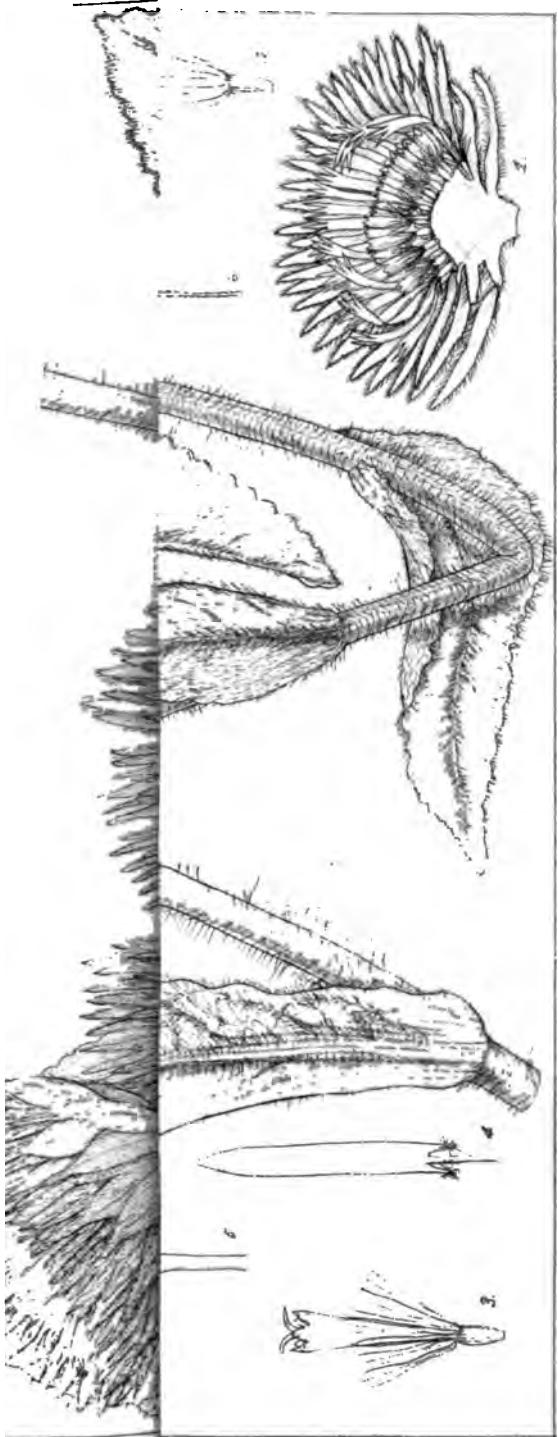




del.

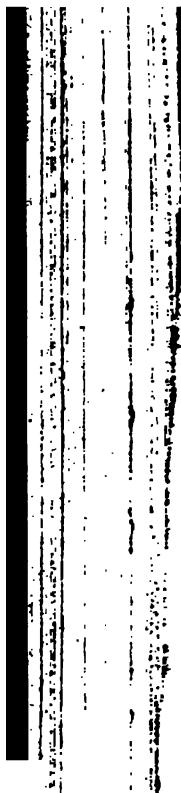
*Dioscorea Buchananii* Benth.





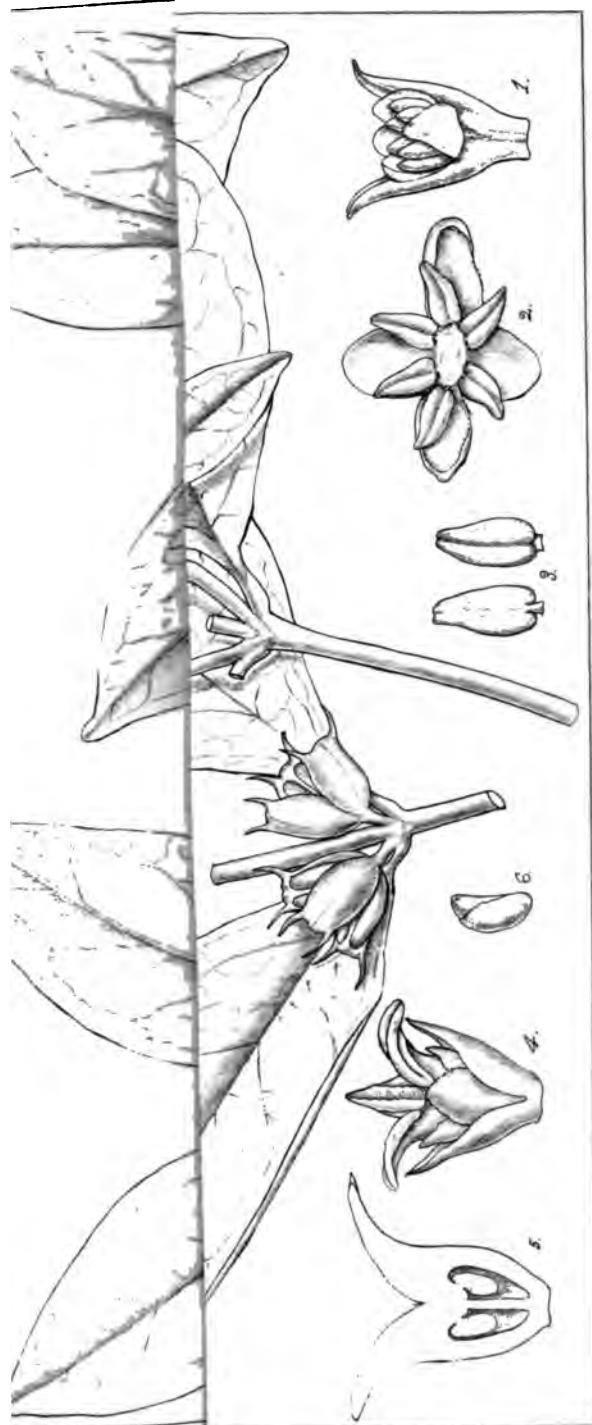
M. S. del.

*Inula shirensis* Oliv



*Notobuxus natalensis*, Oliv.

M. S. da.





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